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**SPECIFICATIONS &
INSTALLATION GUIDE**

ANOTHER QUALITY
PRODUCT BY
FORZA GLOBAL





History tells us Market needs often dictate product development.

We also know that products used in different regions around the globe may not be suitable for the Harsh Australian environment that requires dedicated product development that will stand the test of time.

At FORZA GLOBAL, we understand this. Our research team spend significant time & effort testing our product to ensure it meets the need of the Australian market.

**50
YEAR
Warranty**

- All fittings across our gas and water range are made of the premium quality, corrosion resistant, DR Brass providing both reliability and strength to stand the test of time.
- Fittings are solvent resistant and can confidently be exposed to petroleum based products.
- UV Resistant to handle the harsh Australian conditions.
- Warehoused in Australia by FORZA GLOBAL assuring availability of supply across the range.

We believe in the quality of our product at FORZA GLOBAL, therefore we are proud to announce a 50 year warranty on both our gas and water systems.





FORZA GLOBAL are the manufacturers and distributors of FORZA PE-Xa PIPING Systems which includes the BRASS SLIDE SLEEVE COMPRESSION system for potable water, rainwater and recycled water.

FORZA GLOBAL also manufacture and distribute FORZA HDPE / AL /PEX GAS System, FORZA PE-Xa BRASS CRIMP system. This manual provides specification and installation information for the FORZA Plumbing Systems for Hot and Cold Water.

FORZA FOR POTABLE WATER, RAINWATER AND RECYCLED WATER SIMPLE, SAFE, SECURE

The FORZA Plumbing System comprises of three components; a flexible cross linked high density polyethylene pipe, solid forged DR brass compression fittings and special compression sleeve tools.

All products are manufactured to strict quality controls and comply with Australian Standards, are watermarked approved and fully warranted for 50 years.

The superior material properties of FORZA are ideal for hot and cold water services. The system is hygienic and non-toxic, providing clean and clear drinking water without the inherent problems of conventional plumbing systems which include chlorine, corrosion and scale.

Colour coded pipe is available in BLACK and RED for potable water, GREEN for harvested rainwater and LILAC for recycled water. FORZA is suitable for domestic and commercial applications.

FORZA cross linked high-density polyethylene (PE-Xa) offers flexibility and impact resistance with a smooth bore design resulting in quiet delivery minimizing water hammer and noise attributed to fluctuations in hydraulic pressure.

The FORZA compression sleeve connection eliminates leakages and system failures when installed following installation guidelines. With specially designed tools, FORZA Plumbing Systems are suitable for installation by licensed plumbers.

FORZA's simple joint method involves slipping the compression sleeve on the pipe followed by expanding the pipe end. The barbed end of the brass fitting is then inserted into the expanded pipe and the sleeve is compressed over the pipe using the specialised AXIAL compression tool.

The FORZA PE-Xa Plumbing System joint can be made without the need for flame, heat, solder, or solvents.

SPECIFICATIONS

- Pipe made from Peroxide- cross linked polyethylene (PE-Xa)
 - Used for Hot and Cold Water Services
 - Thermal Conductivity :0.35 W/m.K
 - Roughness: 0.007mm
 - Maximum Temperature: 95 Deg C
 - Short-term Temperature in case of HWS malfunction : 100 Deg
 - Fittings are made from dezincification-resistance brass
 - Pipe Dimension : 16 to 50
 - Suitable for both Wet and Dry construction
 - Approval Mark International Product Certification to Australian Standards
-

COMPRESSION SLEEVE TOOLS

FORZA Plumbing systems tools have been designed to ensure a leak proof joint. The compression tools have been manufactured with the highest quality material and designed to give long term trouble free service. FORZA also offer the option of both manual and battery tools.

WARRANTY

FORZA Plumbing System (excluding tooling) is warranted for 50 years when installed by a licensed plumber in accordance with AS 3500 of the National Plumbing Code Parts 1, 4 and 5 and established installation practices.

AUSTRALIAN STANDARDS COMPLIANCE

FORZA Plumbing System is licensed by Approval Mark International to Australian Standards and complies with Australian and New Zealand Standards AS/NZ 2492:2007 for Pipe (Lic.No.74616) and AS 2537:2-2011 for fittings (Lic. No. 74615).

TEST PROCESURES FOR WATERMARK COMPLIANCE

Listed below are the characteristics that are being tested for as well as the code from which the method for testing is followed:

- Slow crack growth - ISO 13479
- Long term stability - ISO 1167 or as 1462.6
- Thermal stability – ISO/TR 10837
- Resistance to weathering – ISO 14531-1
- Longitudinal reversion – ISO 2505
- Hydrostatic strength – ISO 1167 or AS 1462.6
- Elongation at break - ISO 6259-1, ISO 6259-3
- Effect on water- AS 4020
- Opacity- ISO 7686
- Diameter and wall thickness - AS/NZS 1462.1
- Degree of cross linking - ISO 10147



PRESSURE LOSS TABLES FOR PN20 PE-X_a PIPE

COLD WATER AT 25°C

PEAK FLOW RATE QS (L/S) .01 TO .50	16MM X 2.2 HEAD LOSS (KPA/M)	20MM X 2.8 HEAD LOSS (KPA/M)	25MM X 3.5 HEAD LOSS (KPA/M)	32MM X 4.4 HEAD LOSS (KPA/M)
0.05	0.3465	0.1242	-	-
0.10	1.1650	0.4141	0.1430	0.0430
0.15	2.3930	0.8455	0.2905	0.0866
0.20	4.0077	1.4090	0.4822	0.1430
0.25	5.9950	2.1001	0.7160	0.2122
0.30	8.3490	2.9143	0.9908	0.2927
0.35	11.0620	3.8498	1.3053	0.3846
0.40	14.1295	4.9036	1.6589	0.4879
0.45	-	6.0756	2.0510	0.6018
0.50	-	7.3633	2.4808	0.7266

HOT WATER AT 60°C

PEAK FLOW RATE QS (L/S) .01 TO .50	16MM X 2.2 HEAD LOSS (KPA/M)	20MM X 2.8 HEAD LOSS (KPA/M)	25MM X 3.5 HEAD LOSS (KPA/M)	32MM X 4.4 HEAD LOSS (KPA/M)
0.05	0.2913	0.0135	0.0358	0.0106
0.10	1.0002	0.3520	0.1205	0.0357
0.15	2.0803	0.7270	0.2475	0.0731
0.20	3.5175	1.2222	0.4140	0.1218
0.25	5.3030	1.8343	0.6185	0.1814
0.30	7.4321	2.5605	0.8685	0.2515
0.35	9.9026	3.3998	1.1392	0.3318
0.40	12.7115	4.3509	1.4535	0.4223
0.45	-	5.4121	1.8038	0.5228
0.50	-	6.5836	2.1891	0.6329



FORZA PIPE PACKAGING

PIPE SIZE	BLACK
16MM	5M LENGTHS, 100M COILS
20MM	5M LENGTHS, 100M COILS
25MM	5M LENGTHS, 50M COILS
32MM	5M LENGTHS, 50M COILS
40MM	5M LENGTHS
50MM	5M LENGTHS

PIPE SIZE	RED
16MM	5M LENGTHS, 100M COILS
20MM	5M LENGTHS, 100M COILS
25MM	5M LENGTHS, 50M COILS
32MM	5M LENGTHS, 50M COILS

PIPE SIZE	LILAC	GREEN
16MM	5M LENGTHS, 50M COILS	5M LENGTHS, 50M COILS
20MM	5M LENGTHS, 50M COILS	5M LENGTHS, 50M COILS
25MM	5M LENGTHS, 50M COILS	5M LENGTHS, 50M COILS

NOM OD	MEAN OUTSIDE DIA (MM)		WALL THICKNESS (MM)	
	MIN	MAX	MIN	MAX
DN 16-16MM	16.0	16.3	2.2	2.6
DN 20-20MM	20.0	20.3	2.8	3.2
DN 25-25MM	25.0	25.3	3.6	4.0
DN 32-32MM	32.0	32.3	4.4	5.0
DN 40-40MM	40.0	40.4	5.5	6.2
DN 50-50MM	50.0	50.5	6.9	7.7

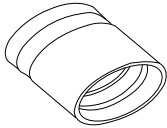
PRESSURE RATINGS

Pipes for water applications are classified in terms of the nominal pressure rating (PN) at water service temperature of 20°C. FORZA has a pressure rating of PN20 and a nominal working pressure and pipe material temperature (PMT).

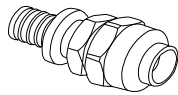
PMT	20C	60C	70C
PN			
20	KPA 2000	1500	1330



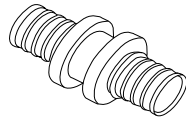
FORZA SLIDE RING FITTINGS LIST



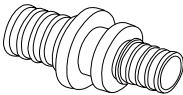
CODE	SIZE	DESCRIPTION
FPCS16	DN16	FORZA PEX COMPRESSION SLEEVE 16MM
FPCS20	DN20	FORZA PEX COMPRESSION SLEEVE 20MM
FPCS25	DN25	FORZA PEX COMPRESSION SLEEVE 25MM
FPCS32	DN32	FORZA PEX COMPRESSION SLEEVE 32MM
FPCS40	DN40	FORZA PEX COMPRESSION SLEEVE 40MM
FPCS50	DN50	FORZA PEX COMPRESSION SLEEVE 50MM



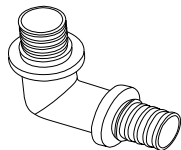
FPCU1615	DN16x1/2"	FORZA PEX FLARED COMPRESSION CONNECTOR 16MM X 1/2" COPPER
FPCU2020	DN20x3/4"	FORZA PEX FLARED COMPRESSION CONNECTOR 20MM X 3/4" COPPER



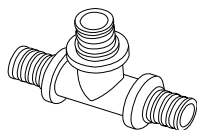
FPSC16	DN16	FORZA PEX NO.1 STRAIGHT COUPLING 16MM
FPSC20	DN20	FORZA PEX NO.1 STRAIGHT COUPLING 20MM
FPSC25	DN25	FORZA PEX NO.1 STRAIGHT COUPLING 25MM
FPSC32	DN32	FORZA PEX NO.1 STRAIGHT COUPLING 32MM
FPSC40	DN40	FORZA PEX NO.1 STRAIGHT COUPLING 40MM
FPSC50	DN50	FORZA PEX NO.1 STRAIGHT COUPLING 50MM



FPRC2016	DN20-16	FORZA PEX NO.1 REDUCING COUPLING 20MM X 16MM
FPRC2516	DN25-16	FORZA PEX NO.1 REDUCING COUPLING 25MM X 16MM
FPRC2520	DN25-20	FORZA PEX NO.1 REDUCING COUPLING 25MM X 20MM
FPRC3225	DN32-25	FORZA PEX NO.1 REDUCING COUPLING 32MM X 25MM
FPRC4020	DN40-20	FORZA PEX NO.1 REDUCING COUPLING 40MM X 20MM
FPRC4025	DN40-25	FORZA PEX NO.1 REDUCING COUPLING 40MM X 25MM
FPRC4032	DN40-32	FORZA PEX NO.1 REDUCING COUPLING 40MM X 32MM
FPRC5032	DN50-32	FORZA PEX NO.1 REDUCING COUPLING 50MM X 32MM
FPRC5040	DN50-40	FORZA PEX NO.1 REDUCING COUPLING 50MM X 40MM

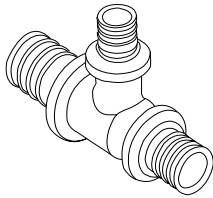


FPE16	DN16	FORZA PEX NO.12 EQUAL ELBOW 16MM
FPE20	DN20	FORZA PEX NO.12 EQUAL ELBOW 20MM
FPE25	DN25	FORZA PEX NO.12 EQUAL ELBOW 25MM
FPE32	DN32	FORZA PEX NO.12 EQUAL ELBOW 32MM
FPE40	DN40	FORZA PEX NO.12 EQUAL ELBOW 40MM
FPE50	DN50	FORZA PEX NO.12 EQUAL ELBOW 50MM



FPET16	DN16	FORZA PEX NO.24 EQUAL TEE 16MM
FPET20	DN20	FORZA PEX NO.24 EQUAL TEE 20MM
FPET25	DN25	FORZA PEX NO.24 EQUAL TEE 25MM
FPET32	DN32	FORZA PEX NO.24 EQUAL TEE 32MM
FPET40	DN40	FORZA PEX NO.24 EQUAL TEE 40MM
FPET50	DN50	FORZA PEX NO.24 EQUAL TEE 50MM

FORZA SLIDE RING FITTINGS LIST

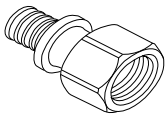


CODE	SIZE	DESCRIPTION
BRANCH REDUCING TEE		
FPRT202016	DN20×20×16	FORZA PEX NO.25 REDUCING TEE 20MM X 20MM X 16MM
FPRT252516	DN25×25×16	FORZA PEX NO.25 REDUCING TEE 25MM X 25MM X 16MM
FPRT252520	DN25×25×20	FORZA PEX NO.25 REDUCING TEE 25MM X 25MM X 20MM
FPRT323220	DN32X32X20	FORZA PEX NO.25 REDUCING TEE 32MM X 32MM X 20MM
FPRT323225	DN32×32×25	FORZA PEX NO.25 REDUCING TEE 32MM X 32MM X 25MM
FPRT404020	DN40X40X20	FORZA PEX NO.25 REDUCING TEE 40MM X 40MM X 20MM
FPRT404025	DN40X40X25	FORZA PEX NO.25 REDUCING TEE 40MM X 40MM X 25MM
FPRT404032	DN40X40X32	FORZA PEX NO.25 REDUCING TEE 40MM X 40MM X 32MM
FPRT505020	DN50X50X20	FORZA PEX NO.25 REDUCING TEE 50MM X 50MM X 20MM
FPRT505025	DN50X50X25	FORZA PEX NO.25 REDUCING TEE 50MM X 50MM X 25MM
FPRT505032	DN50X50X32	FORZA PEX NO.25 REDUCING TEE 50MM X 50MM X 32MM
FPRT505040	DN50X50X40	FORZA PEX NO.25 REDUCING TEE 50MM X 50MM X 40MM

END REDUCING TEE		
FPRT201620	DN20×16×20	FORZA PEX NO.26 REDUCING TEE 20MM X 16MM X 20MM
FPRT251625	DN25×16×25	FORZA PEX NO.26 REDUCING TEE 25MM X 16MM X 25MM
FPRT252025	DN25×20×25	FORZA PEX NO.26 REDUCING TEE 25MM X 20MM X 25MM

END AND BRANCH REDUCING TEE		
FPRT201616	DN20×16×16	FORZA PEX NO.27 REDUCING TEE 20MM X 16MM X 16MM
FPRT252020	DN25×20×20	FORZA PEX NO.27 REDUCING TEE 25MM X 20MM X 20MM
FPRT322525	DN32×25×25	FORZA PEX NO.27 REDUCING TEE 32MM X 25MM X 25MM
FPRT251616	DN25×16×16	FORZA PEX NO.27 REDUCING TEE 25MM X 16MM X 16MM
FPRT252016	DN25×20×16	FORZA PEX NO.27 REDUCING TEE 25MM X 20MM X 16MM
FPRT251620	DN25×16×20	FORZA PEX NO.27 REDUCING TEE 25MM X 16MM X 20MM
FPRT403232	DN40X32X32	FORZA PEX NO.27 REDUCING TEE 40MM X 32MM X 32MM
FPRT504032	DN50X40X32	FORZA PEX NO.27 REDUCING TEE 50MM X 40MM X 32MM

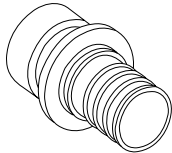
BOTH ENDS REDUCING TEE		
FPRT161620	DN16X16X20	FORZA PEX NO.28 REDUCING TEE 16MM X 16MM X 20MM



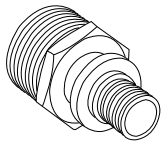
CODE	SIZE	DESCRIPTION
FPBS90D16	DN16	FORZA PEX 16MM X 90 DEG SUPPORT BEND
FPBS90D20	DN20	FORZA PEX 20MM X 90 DEG SUPPORT BEND
FPBS90D25	DN25	FORZA PEX 25MM X 90 DEG SUPPORT BEND
FPFSC1615	DN16×1/2"FI	FORZA PEX NO.2 STRAIGHT CONNECTOR 16MM X 1/2" BSP FEMALE
FPFSC2015	DN20×1/2"FI	FORZA PEX NO.2 STRAIGHT CONNECTOR 20MM X 1/2" BSP FEMALE
FPFSC2020	DN20×3/4"FI	FORZA PEX NO.2 STRAIGHT CONNECTOR 20MM X 3/4" BSP FEMALE



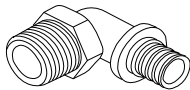
FORZA SLIDE RING FITTINGS LIST



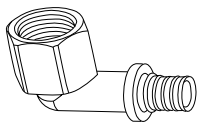
CODE	SIZE	DESCRIPTION
FPCB16	DN16	FORZA PEX CONNECTING BARB 16MM
FPCB20	DN20	FORZA PEX CONNECTING BARB 20MM
FPCB25	DN25	FORZA PEX CONNECTING BARB 25MM
FPCB32	DN32	FORZA PEX CONNECTING BARB 32MM
FPCB16F	DN16	FORZA PEX CONNECTING BARB FEMALE 16MM
FPCB20F	DN20	FORZA PEX CONNECTING BARB FEMALE 20MM
FPCB25F	DN25	FORZA PEX CONNECTING BARB FEMALE 25MM



FPMSC1615	DN16x1/2"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 16MM X 1/2" BSP MALE
FPMSC1620	DN16x3/4"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 16MM X 3/4" BSP MALE
FPMSC2015	DN20x1/2"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 20MM X 1/2" BSP MALE
FPMSC2020	DN20x3/4"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 20MM X 3/4" BSP MALE
FPMSC2025	DN20x1"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 20MM X 1" BSP MALE
FPMSC2515	DN25x1/2"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 25MM X 1/2" BSP MALE
FPMSC2520	DN25x3/4"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 25MM X 3/4" BSP MALE
FPMSC2525	DN25x1"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 25MM X 1" BSP MALE
FPMSC3220	DN32x3/4"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 32MM X 3/4" BSP MALE
FPMSC3225	DN32x1"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 32MM X 1" BSP MALE
FPMSC4032	DN40X1-1/4"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 40MM X 1-1/4" BSP MALE
FPMSC5032	DN50X1-1/4"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 50MM X 1-1/4" BSP MALE
FPMSC5040	DN50X1-1/2"MI	FORZA PEX NO.3 STRAIGHT CONNECTOR 50MM X 1-1/2" BSP MALE

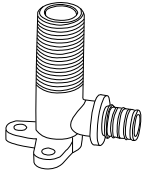


FPME1615	DN16x1/2"MI	FORZA PEX NO.13 ELBOW 16MM X 1/2" BSP MALE
FPME2015	DN20x1/2"MI	FORZA PEX NO.13 ELBOW 20MM X 1/2" BSP MALE
FPME2020	DN20x3/4"MI	FORZA PEX NO.13 ELBOW 20MM X 3/4" BSP MALE
FPME2520	DN25x3/4"MI	FORZA PEX NO.13 ELBOW 25MM X 3/4" BSP MALE

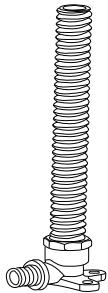


FPFE1615	DN16x1/2"FI	FORZA PEX NO.14 ELBOW 16MM X 1/2" BSP FEMALE
FPFE2015	DN20x1/2"FI	FORZA PEX NO.14 ELBOW 20MM X 1/2" BSP FEMALE
FPFE2020	DN20x3/4"FI	FORZA PEX NO.14 ELBOW 20MM X 3/4" BSP FEMALE

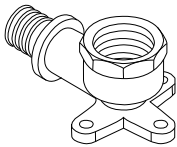
FORZA SLIDE RING FITTINGS LIST



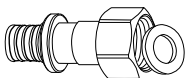
CODE	SIZE	DESCRIPTION
FPWM161565	DN16x1/2"MI-65	FORZA PEX NO.19BP LUGGED ELBOW 16MM X 1/2" BSP MALE 65MM LONG
FPWM161590	DN16x1/2"MI-90	FORZA PEX NO.19BP LUGGED ELBOW 16MM X 1/2" BSP MALE 90MM LONG
FPWM201595	DN20x1/2"MI-95	FORZA PEX NO.19BP LUGGED ELBOW 20MM X 1/2" BSP MALE 95MM LONG
FPWM202095	DN20x13/4"MI-95	FORZA PEX NO.19BP LUGGED ELBOW 20MM X 3/4" BSP MALE 95MM LONG



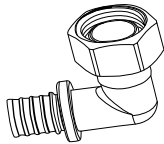
FPWM2020200	DN20X3/4"MI-200	FORZA PEX NO.19BP LUGGED ELBOW 20MM X 3/4" BSP MALE 200MM LONG
FPWM1615150	DN16x1/2"MI-150	FORZA PEX NO.19BP LUGGED ELBOW 16MM X 1/2" BSP MALE 150MM LONG
FPWM1615200	DN16x1/2"MI-200	FORZA PEX NO.19BP LUGGED ELBOW 16MM X 1/2" BSP MALE 200MM LONG
FPWM2015200	DN20x1/2"MI-200	FORZA PEX NO.19BP LUGGED ELBOW 20MM X 1/2" BSP MALE 200MM LONG
FPWM2020150	DN20x3/4"MI-150	FORZA PEX NO.19BP LUGGED ELBOW 20MM X 3/4" BSP MALE 150MM LONG
FPWM2020180	DN20x3/4"MI-180	FORZA PEX NO.19BP LUGGED ELBOW 20MM X 3/4" BSP MALE 180MM LONG



FPWF1615	DN16x1/2"FI	FORZA PEX NO.15BP LUGGED ELBOW 16MM X 1/2" BSP FEMALE
FPWF2020	DN20x3/4"FI	FORZA PEX NO.15BP LUGGED ELBOW 20MM X 3/4" BSP FEMALE



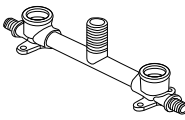
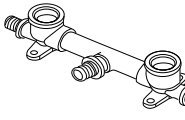
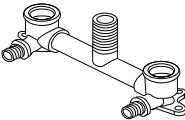
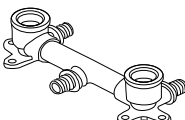
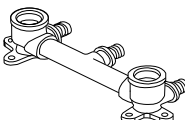
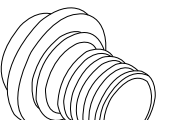
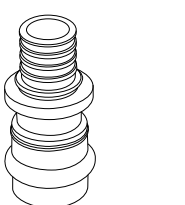
FPSTC1615	DN16x1/2"FI	FORZA PEX NO.62 STRAIGHT TAP CONNECTOR 16MM X 1/2" BSP FEMALE
FPSTC2020	DN20x3/4"FI	FORZA PEX NO.62 STRAIGHT TAP CONNECTOR 20MM X 3/4" BSP FEMALE



FPBTC1615	DN16x1/2"FI	FORZA PEX NO.63 BENT TAP CONNECTOR 16MM X 1/2" BSP FEMALE
FPBTC2020	DN20x3/4"FI	FORZA PEX NO.63 BENT TAP CONNECTOR 20MM X 3/4" BSP FEMALE



FORZA SLIDE RING FITTINGS LIST

	CODE	SIZE	DESCRIPTION
	FPBLAS300	300MM	FORZA PEX BATH/LAUNDRY ASSEMBLY STRAIGHT 300MM
	FPSAS150	150MM	FORZA PEX SHOWER ASSEMBLY STRAIGHT 150MM
	FPBLARA200	200MM	FORZA PEX BATH/LAUNDRY ASSEMBLY RIGHT ANGLE 200MM
	FPBLARA300	300MM	FORZA PEX BATH/LAUNDRY ASSEMBLY RIGHT ANGLE 300MM
	FPSARA150	150MM	FORZA PEX SHOWER ASSEMBLY RIGHT ANGLE 150MM
	FPSARA200	200MM	FORZA PEX SHOWER ASSEMBLY RIGHT ANGLE 200MM
	FPSARA150BU	150MM	FORZA PEX SHOWER ASSEMBLY RIGHT ANGLE BARBS UP 150MM
	FPSARA200BU	200MM	FORZA PEX SHOWER ASSEMBLY RIGHT ANGLE BARBS UP 200MM
	FPS16	DN16	FORZA PEX NO.61 STOPPER 16MM
	FPS20	DN20	FORZA PEX NO.61 STOPPER 20MM
	FPCP1615	DN16X1/2" CU	FORZA PEX 16MM X COPPER PRESS 1/2"
	FPCP2020	DN20X3/4" CU	FORZA PEX 20MM X COPPER PRESS 3/4"
	FPCP2525	DN25X1" CU	FORZA PEX 25MM X COPPER PRESS 1"
	FPCP3232	DN32X1"-1/4" CU	FORZA PEX 32MM X COPPER PRESS 1-1/4"

SLIDE SLEEVE INSTALLATION INSTRUCTIONS

The following instructions explain the correct installation procedure for FORZA PEX Slide sleeve fittings in conjunction with FORZA PEX pipe.

1



With a set of pipe cutters /shears cut the pipe at 90° ensuring the pipe is square on the end.

2



Pick up sleeve and check that the bevelled end (shown in picture) faces towards the fitting.

3



Slide the sleeve over the pipe. Pipe is now ready to be expanded.

4



Choose the correct size expander head for the pipe being expanded. Pictured is the dual 16mm-20mm head suitable for both 16mm and 20mm pipe.

SLIDE SLEEVE INSTALLATION INSTRUCTIONS

5



Close the handles of the expander tool to expand the pipe

6



Open the handles and rotate the expander 30° then expand again. This ensures an even expansion of the inside pipe surface.

7



Fitting is now able to be inserted into pipe.

8



Push fitting into pipe until it reaches the stopper. The sleeve is now ready to be pulled over the pipe and fitting using the specially designed compression tool.

9



Place the sleeve and fitting between the jaws of the compression tool. Open and close the handles of the tool to draw the sleeve over the pipe and fitting.

10



Once the sleeve is touching the shoulder of the fitting process is complete.

SLIDE SLEEVE INSTALLATION INSTRUCTIONS

At completion of installation a pressure test must be carried out in accordance with AS/NZS 3500 and or any other requirements specified by local authorities.



Manual
Compression tool



Battery
Compression tool



Forza Pex pipe and fittings are guaranteed against manufacturing defects for a period of 50 YEARS when installed and used in accordance of the Australian Plumbing code and or the LOCAL or STATE Authority and when installed by a licensed PLUMBER.



Forza Pex PIPE complies with the standards as set out in AS/NZS 2492:2007 Cross Linked polyethylene (PE-X) pipes for pressure applications.

Licence No. WM 74817

Forza Pex FITTINGS comply to the standards as set out in AS/NZS 2537.2:2011 - Mechanical jointed fittings for use with cross linked polyethylene pipe (XLPE) for hot and cold applications.

Licence No. WM74615

a product by





**SPECIFICATIONS &
INSTALLATION GUIDE**

ANOTHER QUALITY
PRODUCT BY
FORZA GLOBAL





FORZA GLOBAL are the manufacturers and distributors of FORZA PE-Xa PIPING Systems which includes the BRASS FITTING COPPER RING CRIMP system for potable water, rainwater and recycled water. FORZA GLOBAL also manufacture and distribute FORZA PEX / AL /PE

GAS System, FORZA STAINLESS CRIMP system and BRASS SLIDE RING COMPRESSION SLEEVE system. This manual provides specification and installation information for the FORZA Plumbing Systems for Hot and Cold Water.

FORZA FOR POTABLE WATER, RAINWATER AND RECYCLED WATER SIMPLE, SAFE, SECURE

The FORZA Plumbing System comprises of three components; a flexible cross linked high density polyethylene pipe, solid forged DR brass with copper ring fittings and special CRIMP tools.

All products are manufactured to strict quality controls and comply with Australian Standards, are watermarked approved and fully warranted for 50 years.

The superior material properties of FORZA are ideal for hot and cold water services. The system is hygienic and non-toxic, providing clean and clear drinking water without the inherent problems of conventional plumbing systems which include chlorine, corrosion and scale.

Colour coded pipe is available in BLACK and RED for potable water, GREEN for harvested rainwater and LILAC for recycled water. FORZA is suitable for domestic and commercial applications.

FORZA cross linked high-density polyethylene (PE-Xa) offers flexibility and impact resistance with a smooth bore design resulting in quiet delivery minimizing water hammer and noise attributed to fluctuations in hydraulic pressure.

The FORZA CRIMP ring connection eliminates leakages and system failures when installed following installation guidelines. With specially designed tools, FORZA Plumbing Systems are suitable for installation by licensed plumbers.

FORZA's simple joint method involves cutting the pipe square, pushing the pipe onto the fitting ensuring pipe is visible through the viewing port in the copper ring, followed by crimping the ring with the FORZA approved crimp tool. System must be tested in accordance with AS/NZ 3500.1

The FORZA PE-Xa Plumbing System joint can be made without the need for flame, heat, solder, or solvents.



SPECIFICATIONS

- Pipe made from Peroxide- cross linked polyethylene (PE-Xa)
 - Used for Hot and Cold Water Services
 - Thermal Conductivity :0.35 W/m.K
 - Roughness: 0.007mm
 - Maximum Temperature: 95 Deg C
 - Short-term Temperature in case of HWS malfunction : 100 Deg
 - Fittings are made from dezincification-resistance brass
 - Pipe Dimension : 16 to 50
 - Suitable for both Wet and Dry construction
 - Approval Mark International Product Certification to Australian Standards
-

CRIMP TOOLS

FORZA Plumbing systems tools have been designed to ensure a leak proof joint. The crimp tools have been manufactured with the highest quality material and designed to give long term trouble free service. FORZA also offer the option of both manual and battery tools.

WARRANTY

FORZA Plumbing System (excluding tooling) is warranted for 50 years when installed by a licensed plumber in accordance with AS 3500 of the National Plumbing Code Parts 1, 4 and 5 and established installation practices.

AUSTRALIAN STANDARDS COMPLIANCE

FORZA Plumbing System is licensed by Approval Mark International to Australian Standards and complies with Australian and New Zealand Standards AS/NZ 2492:2007 for Pipe (Lic.No.74616) and AS 2537:2-2011 for fittings (Lic. No. 74615)

TEST PROCURES FOR WATERMARK COMPLIANCE

Listed below are the characteristics that are being tested for as well as the code from which the method for testing is followed:

- Slow crack growth - ISO 13479
- Long term stability - ISO 1167 or as 1462.6
- Thermal stability – ISO/TR 10837
- Resistance to weathering – ISO 14531-1
- Longitudinal reversion – ISO 2505
- Hydrostatic strength – ISO 1167 or AS 1462.6
- Elongation at break - ISO 6259-1, ISO 6259-3
- Effect on water- AS 4020
- Opacity- ISO 7686
- Diameter and wall thickness - AS/NZS 1462.1
- Degree of cross linking - ISO 10147





PRESSURE LOSS TABLES FOR PN20 PE-Xc PIPE

COLD WATER AT 25°C

PEAK FLOW RATE QS (L/S) .01 TO .50	16MM X 2.2 HEAD LOSS (KPA/M)	20MM X 2.8 HEAD LOSS (KPA/M)	25MM X 3.5 HEAD LOSS (KPA/M)	32MM X 4.4 HEAD LOSS (KPA/M)
0.05	0.3465	0.1242	-	-
0.10	1.1650	0.4141	0.1430	0.0430
0.15	2.3930	0.8455	0.2905	0.0866
0.20	4.0077	1.4090	0.4822	0.1430
0.25	5.9950	2.1001	0.7160	0.2122
0.30	8.3490	2.9143	0.9908	0.2927
0.35	11.0620	3.8498	1.3053	0.3846
0.40	14.1295	4.9036	1.6589	0.4879
0.45	-	6.0756	2.0510	0.6018
0.50	-	7.3633	2.4808	0.7266

HOT WATER AT 60°C

PEAK FLOW RATE QS (L/S) .01 TO .50	16MM X 2.2 HEAD LOSS (KPA/M)	20MM X 2.8 HEAD LOSS (KPA/M)	25MM X 3.5 HEAD LOSS (KPA/M)	32MM X 4.4 HEAD LOSS (KPA/M)
0.05	0.2913	0.0135	0.0358	0.0106
0.10	1.0002	0.3520	0.1205	0.0357
0.15	2.0803	0.7270	0.2475	0.0731
0.20	3.5175	1.2222	0.4140	0.1218
0.25	5.3030	1.8343	0.6185	0.1814
0.30	7.4321	2.5605	0.8685	0.2515
0.35	9.9026	3.3998	1.1392	0.3318
0.40	12.7115	4.3509	1.4535	0.4223
0.45	-	5.4121	1.8038	0.5228
0.50	-	6.5836	2.1891	0.6329

FORZA PIPE PACKAGING

PIPE SIZE	BLACK
16MM	5M LENGTHS, 100M COILS
20MM	5M LENGTHS, 100M COILS
25MM	5M LENGTHS, 50M COILS
32MM	5M LENGTHS, 50M COILS
40MM	5M LENGTHS
50MM	5M LENGTHS

PIPE SIZE	RED
16MM	5M LENGTHS, 100M COILS
20MM	5M LENGTHS, 100M COILS
25MM	5M LENGTHS, 50M COILS
32MM	5M LENGTHS, 50M COILS

PIPE SIZE	LILAC	GREEN
16MM	5M LENGTHS, 50M COILS	5M LENGTHS, 50M COILS
20MM	5M LENGTHS, 50M COILS	5M LENGTHS, 50M COILS
25MM	5M LENGTHS, 50M COILS	5M LENGTHS, 50M COILS

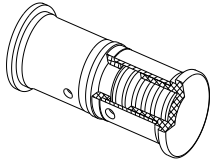
NOM OD	MEAN OUTSIDE DIA (MM)		WALL THICKNESS (MM)	
	MIN	MAX	MIN	MAX
DN 16-16MM	16.0	16.3	2.2	2.6
DN 20-20MM	20.0	20.3	2.8	3.2
DN 25-25MM	25.0	25.3	3.6	4.0
DN 32-32MM	32.0	32.3	4.4	5.0
DN 40-40MM	40.0	40.4	5.5	6.2
DN 50-50MM	50.0	50.5	6.9	7.7

PRESSURE RATINGS

Pipes for water applications are classified in terms of the nominal pressure rating (PN) at water service temperature of 20°C. FORZA has a pressure rating of PN20 and a nominal working pressure and pipe material temperature (PMT).

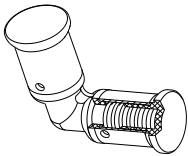
PMT	20C	60C	70C
PN			
20	KPA 2000	1500	1330

FORZA WATER CRIMP FITTINGS LIST

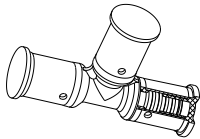


CODE	SIZE	DESCRIPTION
COUPLING		
FCSC16	DN16	FORZA WATER CRIMP NO.1 STRAIGHT COUPLING 16MM
FCSC20	DN20	FORZA WATER CRIMP NO.1 STRAIGHT COUPLING 20MM
FCSC25	DN25	FORZA WATER CRIMP NO.1 STRAIGHT COUPLING 25MM
FCSC32	DN32	FORZA WATER CRIMP NO.1 STRAIGHT COUPLING 32MM

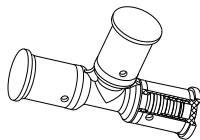
REDUCING COUPLING		
FCRC2016	DN20-16	FORZA WATER CRIMP NO.1 REDUCING COUPLING 20MM X 16MM
FCRC2516	DN25-16	FORZA WATER CRIMP NO.1 REDUCING COUPLING 25MM X 16MM
FCRC2520	DN25-20	FORZA WATER CRIMP NO.1 REDUCING COUPLING 25MM X 20MM
FCRC3220	DN32-20	FORZA WATER CRIMP NO.1 REDUCING COUPLING 32MM X 20MM
FCRC3225	DN32-25	FORZA WATER CRIMP NO.1 REDUCING COUPLING 32MM X 25MM



ELBOW		
FCE16	DN16	FORZA WATER CRIMP NO.12 EQUAL ELBOW 16MM
FCE20	DN20	FORZA WATER CRIMP NO.12 EQUAL ELBOW 20MM
FCE25	DN25	FORZA WATER CRIMP NO.12 EQUAL ELBOW 25MM
FCE32	DN32	FORZA WATER CRIMP NO.12 EQUAL ELBOW 32MM



EQUAL TEE		
FCET16	DN16	FORZA WATER CRIMP NO.24 EQUAL TEE 16MM
FCET20	DN20	FORZA WATER CRIMP NO.24 EQUAL TEE 20MM
FCET25	DN25	FORZA WATER CRIMP NO.24 EQUAL TEE 25MM
FCET32	DN32	FORZA WATER CRIMP NO.24 EQUAL TEE 32MM



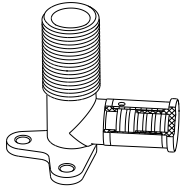
CENTRE REDUCING TEE		
FCRT202016	DN20X20X16	FORZA WATER CRIMP NO.25 REDUCING TEE 20MM X 20MM X 16MM
FCRT252516	DN25X25X16	FORZA WATER CRIMP NO.25 REDUCING TEE 25MM X 25MM X 16MM
FCRT252520	DN25X25X20	FORZA WATER CRIMP NO.25 REDUCING TEE 25MM X 25MM X 20MM
FCRT323216	DN32X32X16	FORZA WATER CRIMP NO.25 REDUCING TEE 32MM X 32MM X 16MM
FCRT323220	DN32X32X20	FORZA WATER CRIMP NO.25 REDUCING TEE 32MM X 32MM X 20MM
FCRT323225	DN32X32X25	FORZA WATER CRIMP NO.25 REDUCING TEE 32MM X 32MM X 25MM

END REDUCING TEE		
FCRT201620	DN20X16X20	FORZA WATER CRIMP NO.26 REDUCING TEE 20MM X 16MM X 20MM
FCRT251625	DN25X16X25	FORZA WATER CRIMP NO.26 REDUCING TEE 25MM X 16MM X 25MM
FCRT252025	DN25X20X25	FORZA WATER CRIMP NO.26 REDUCING TEE 25MM X 20MM X 25MM

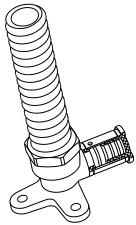
END AND CENTRE REDUCING TEE		
FCRT201616	DN20X16X16	FORZA WATER CRIMP NO.27 REDUCING TEE 20MM X 16MM X 16MM
FCRT251616	DN25X16X16	FORZA WATER CRIMP NO.27 REDUCING TEE 25MM X 16MM X 16MM
FCRT252020	DN25X20X20	FORZA WATER CRIMP NO.27 REDUCING TEE 25MM X 20MM X 20MM



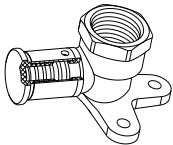
FORZA WATER CRIMP FITTINGS LIST



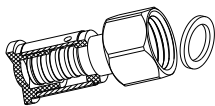
CODE	SIZE	DESCRIPTION
MALE LUGGED ELBOW		
FCWM161565	DN16X1/2"MI-65	FORZA WATER CRIMP NO.19BP ELBOW 16MM X 1/2" BSP MALE 65MM LONG
FCWM161590	DN16X1/2"MI-90	FORZA WATER CRIMP NO.19BP ELBOW 16MM X 1/2" BSP MALE 90MM LONG
FCWM201595	DN20X1/2"MI-95	FORZA WATER CRIMP NO.19BP ELBOW 16MM X 1/2" BSP MALE 95MM LONG
FCWM202095	DN20X3/4"MI-95	FORZA WATER CRIMP NO.19BP ELBOW 20MM X 3/4" BSP MALE 95MM LONG



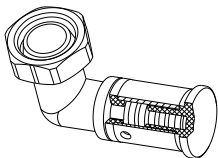
EXTENDED MALE LUGGED ELBOW		
FCWM1615150	DN16X1/2"MI-150	FORZA WATER CRIMP NO.19BP ELBOW 16MM X 1/2" BSP MALE 150MM LONG
FCWM1615200	DN16X1/2"MI-200	FORZA WATER CRIMP NO.19BP ELBOW 16MM X 1/2" BSP MALE 200MM LONG
FCWM2015200	DN20x1/2"MI-200	FORZA WATER CRIMP NO.19BP ELBOW 20MM X 1/2" BSP MALE 200MM LONG
FCWM2020200	DN20x3/4"MI-200	FORZA WATER CRIMP NO.19BP ELBOW 20MM X 3/4" BSP MALE 200MM LONG



FEMALE LUGGED ELBOW		
FCWF1615	DN16X1/2"FI	FORZA WATER CRIMP NO.15BP LUGGED ELBOW 16MM X 1/2" BSP FEMALE
FCWF2015	DN20X1/2"FI	FORZA WATER CRIMP NO.15BP LUGGED ELBOW 20MM X 1/2" BSP FEMALE
FCWF2020	DN20X3/4"FI	FORZA WATER CRIMP NO.15BP LUGGED ELBOW 20MM X 3/4" BSP FEMALE

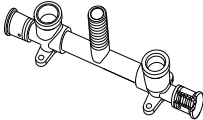
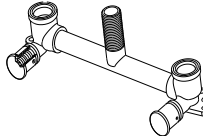
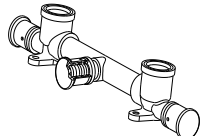
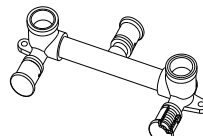
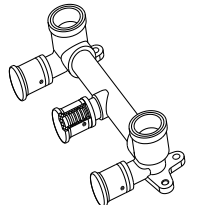


STRAIGHT TAP CONNECTOR		
FCSTC1615	DN16X1/2"FI	FORZA WATER CRIMP NO.62 STRAIGHT TAP CONNECTOR 16MM X 1/2" BSP
FCSTC2020	DN20X3/4"FI	FORZA WATER CRIMP NO.62 STRAIGHT TAP CONNECTOR 20MM X 3/4" BSP



BENT TAP CONNECTOR		
FCBTC1615	DN16X1/2"FI	FORZA WATER CRIMP NO.63 BENT TAPCONNECTOR 16MM X 1/2" BSP
FCBTC2020	DN20X3/4"FI	FORZA WATER CRIMP NO.63 BENT TAPCONNECTOR 20MM X 3/4" BSP

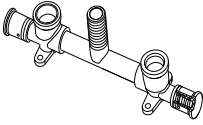
FORZA WATER CRIMP FITTINGS LIST

	CODE	SIZE	DESCRIPTION
	BATH/LAUNDRY ASSEMBLY		
	FCBLAS300	300MM	FORZA WATER CRIMP BATH/LAUNDRY ASSEMBLY STRAIGHT 300MM
	FCBLARA200	200MM	FORZA WATER CRIMP BATH/LAUNDRY ASSEMBLY RIGHT ANGLE 200MM
	FCBLARA300	300MM	FORZA WATER CRIMP BATH/LAUNDRY ASSEMBLY RIGHT ANGLE 300MM
	SHOWER ASSEMBLY		
	FCSAS150	150MM	FORZA WATER CRIMP SHOWER ASSEMBLY STRAIGHT 150MM
	FCSARA150	150MM	FORZA WATER CRIMP SHOWER ASSEMBLY RIGHT ANGLE 150MM
	FCSARA200	200MM	FORZA WATER CRIMP SHOWER ASSEMBLY RIGHT ANGLE 200MM
	FCSARA150BU	150MM	FORZA WATER CRIMP SHOWER ASSEMBLY BARBS UP 150MM
	FCSARA200BU	200MM	FORZA WATER CRIMP SHOWER ASSEMBLY BARBS UP 200MM

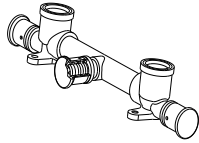
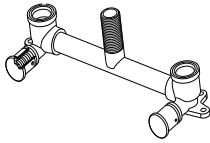


FORZA WATER CRIMP FITTINGS LIST

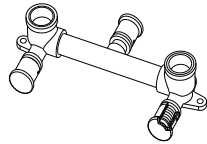
CODE	SIZE	DESCRIPTION
BATH/LAUNDRY ASSEMBLY		
FCBLAS300	300MM	FORZA WATER CRIMP BATH/LAUNDRY ASSEMBLY STRAIGHT 300MM



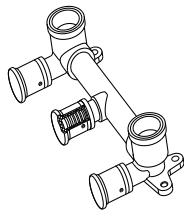
FCBLARA200	200MM	FORZA WATER CRIMP BATH/LAUNDRY ASSEMBLY RIGHT ANGLE 200MM
FCBLARA300	300MM	FORZA WATER CRIMP BATH/LAUNDRY ASSEMBLY RIGHT ANGLE 300MM



SHOWER ASSEMBLY		
FCSAS150	150MM	FORZA WATER CRIMP SHOWER ASSEMBLY STRAIGHT 150MM



FCSARA150	150MM	FORZA WATER CRIMP SHOWER ASSEMBLY RIGHT ANGLE 150MM
FCSARA200	200MM	FORZA WATER CRIMP SHOWER ASSEMBLY RIGHT ANGLE 200MM



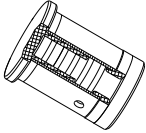
FCSARA150BU	150MM	FORZA WATER CRIMP SHOWER ASSEMBLY BARBS UP 150MM
FCSARA200BU	200MM	FORZA WATER CRIMP SHOWER ASSEMBLY BARBS UP 200MM

FORZA WATER CRIMP FITTINGS LIST

CODE	SIZE	DESCRIPTION
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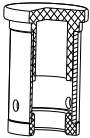
END STOPPER

FCS16	DN16	FORZA WATER CRIMP NO.61 STOPPER 16MM
FCS20	DN20	FORZA WATER CRIMP NO.61 STOPPER 20MM
FCS25	DN25	FORZA WATER CRIMP NO.61 STOPPER 25MM
FCS32	DN32	FORZA WATER CRIMP NO.61 STOPPER 32MM



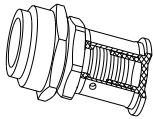
CRIMP RING ASSEMBLY

FCCR16	DN16	FORZA WATER CRIMP RING ASSEMBLY 16MM
FCCR20	DN20	FORZA WATER CRIMP RING ASSEMBLY 20MM
FCCR25	DN25	FORZA WATER CRIMP RING ASSEMBLY 25MM
FCCR32	DN32	FORZA WATER CRIMP RING ASSEMBLY 32MM



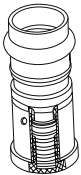
FLARED COMPRESSION CONNECTOR

FCCU1615	DN16X1/2" CU	FORZA WATER CRIMP FLARED COMPRESSION CONNECTOR 16MM X 1/2" CU
FCCU2020	DN20X3/4" CU	FORZA WATER CRIMP FLARED COMPRESSION CONNECTOR 20MM X 3/4" CU



COPPER PRESS ADAPTORS

FCCP1615	DN16X1/2" CU	FORZA WATER CRIMP 16MM X COPPER PRESS 1/2"
FCCP2020	DN20X3/4" CU	FORZA WATER CRIMP 20MM X COPPER PRESS 3/4"
FCCP2525	DN25 X 1" CU	FORZA WATER CRIMP 25MM X COPPER PRESS 1"
FCCP3232	DN32X1-1/4" CU	FORZA WATER CRIMP 32MM X COPPER PRESS 1-1/4"



WATER CRIMP INSTALLATION INSTRUCTIONS

The following instructions explain the correct installation procedure for FORZA PEX Slide sleeve fittings in conjunction with FORZA PEX pipe.

1



With a set of pipe cutters /shears cut the pipe at 90° ensuring the pipe is square on the end.

2



Push fitting onto pipe until pipe is visible through the viewing port on copper ring. This ensures that pipe has been inserted to the correct depth.

3



Position tool so that the jaws of the tool are in the centre of the copper ring.



4



Proceed to crimp the fitting until jaws of tool are completely closed.



5

Once crimp is complete test with gauge. Gauge will slide over copper ring if it has been done correctly.

At completion of installation a pressure test must be carried out in accordance with AS/NZS 3500 and or any other requirements specified by local authorities.



WATER CRIMP INSTALLATION INSTRUCTIONS



Battery Crimping Tool



Manual Crimping Tool



Forza Pex pipe and fittings are guaranteed against manufacturing defects for a period of 50 YEARS when installed and used in accordance of the Australian Plumbing code and or the LOCAL or STATE Authority and when installed by a licensed PLUMBER.



Forza Pex PIPE complies with the standards as set out in AS/NZS 2492:2007 Cross Linked polyethylene (PE-X) pipes for pressure applications.

Licence No. WM74817

Forza Pex FITTINGS comply to the standards as set out in AS/NZS 2537.2:2011 - Mechanical jointed fittings for use with cross linked polyethylene pipe (XLPE) for hot and cold applications.

Licence No. WM74615

a product by





**SPECIFICATIONS &
INSTALLATION GUIDE**

ANOTHER QUALITY
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FORZA GLOBAL





GAS PIPE

FORZA GAS Pipe is multi layered, incorporating a layer of aluminium between an inner of PE-X and an outer of HDPE. This combination gives stability while still being flexible and strong.

FORZA GAS Pipe is guaranteed against manufacturing defect for a period of 50 years when installed and used in accordance of the Australian and New Zealand Plumbing Codes and or the Local or State Authority and when installed by a licensed Plumber.

FORZA Gas Pipe complies and is manufactured in accordance with the standards as set out in AS4176.

GAS CRIMP

FORZA GAS Crimp fittings are Manufactured from quality DR Brass and are precision CNC machined to Australian and New Zealand Standards.

FORZA GAS Crimp fittings have strengthened copper rings with depth inspection windows and the longest joining barbs on the market.

FORZA GAS Crimp fittings do not rely on an 'O' Ring for gas seal, using FORZA GAS eliminates the risk of installer error due to damaged or rolled 'O' Rings.

FORZA GAS Crimp Unlike other systems will fail a manometer test if fittings are not crimped, thus eliminating the chance of fittings blowing at a later date when under pressure for a period of time.

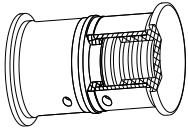


FORZA GAS PIPE PACKAGING

PIPE SIZE	PACKAGING
16MM	5M LENGTHS, 50M, 100M COILS
20MM	5M LENGTHS, 100M COILS
25MM	5M LENGTHS, 50M COILS
32MM	5M LENGTHS, 50M COILS
40MM	5M LENGTHS
50MM	5M LENGTHS

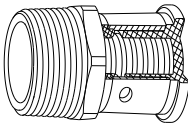


FORZA GAS FITTINGS LIST

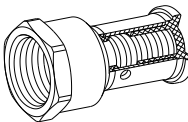


CODE	SIZE	DESCRIPTION
JOINER		
FG11616	DN16	FORZA GAS JOINER 16MM
FG12020	DN20	FORZA GAS JOINER 20MM
FG12525	DN25	FORZA GAS JOINER 25MM
FG13232	DN32	FORZA GAS JOINER 32MM
FG14040	DN40	FORZA GAS JOINER 40MM
FG15050	DN50	FORZA GAS JOINER 50MM

REDUCING JOINER		
FG22016	DN20-16	FORZA GAS REDUCER 20MM X 16MM
FG22516	DN25-16	FORZA GAS REDUCER 25MM X 16MM
FG22520	DN25-20	FORZA GAS REDUCER 25MM X 20MM
FG23220	DN32-20	FORZA GAS REDUCER 32MM X 20MM
FG23225	DN32-25	FORZA GAS REDUCER 32MM X 25MM
FG24020	DN40-20	FORZA GAS REDUCER 40MM X 20MM
FG24025	DN40-25	FORZA GAS REDUCER 40MM X 25MM
FG24032	DN40-32	FORZA GAS REDUCER 40MM X 32MM
FG25025	DN50-25	FORZA GAS REDUCER 50MM X 25MM
FG25032	DN50-32	FORZA GAS REDUCER 50MM X 32MM
FG25040	DN50-40	FORZA GAS REDUCER 50MM X 40MM



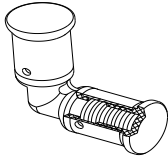
MALE JOINER		
FG31615	DN16X1/2"MI	FORZA GAS MALE JOINER 16MM X 1/2"
FG31620	DN16X3/4"MI	FORZA GAS MALE JOINER 16MM X 3/4"
FG32015	DN20X1/2"MI	FORZA GAS MALE JOINER 20MM X 1/2"
FG32020	DN20X3/4"MI	FORZA GAS MALE JOINER 20MM X 3/4"
FG32515	DN25X1/2"MI	FORZA GAS MALE JOINER 25MM X 1/2"
FG32520	DN25X3/4"MI	FORZA GAS MALE JOINER 25MM X 3/4"
FG32525	DN25X1"MI	FORZA GAS MALE JOINER 25MM X 1"
FG33225	DN32X1"MI	FORZA GAS MALE JOINER 32MM X 1"
FG33232	DN32X1-1/4"MI	FORZA GAS MALE JOINER 32MM X 1-1/4"
FG34032	DN40X1-1/4"MI	FORZA GAS MALE JOINER 40MM X 1-1/4"
FG34040	DN40X1-1/2"MI	FORZA GAS MALE JOINER 40MM X 1-1/2"
FG35050	DN50X2"MI	FORZA GAS MALE JOINER 50MM X 2"



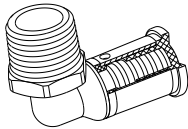
FEMALE JOINER		
FG41615	DN16X1/2"FI	FORZA GAS FEMALE JOINER 16MM X 1/2"
FG42015	DN20X1/2"FI	FORZA GAS FEMALE JOINER 20MM X 1/2"
FG42020	DN20X3/4"FI	FORZA GAS FEMALE JOINER 20MM X 3/4"
FG42520	DN25X3/4"FI	FORZA GAS FEMALE JOINER 25MM X 3/4"
FG42525	DN25X1"FI	FORZA GAS FEMALE JOINER 25MM X 1"
FG43220	DN32X3/4"FI	FORZA GAS FEMALE JOINER 32MM X 3/4"
FG43225	DN32X1"FI	FORZA GAS FEMALE JOINER 32MM X 1"
FG43232	DN32X1 1/4"FI	FORZA GAS FEMALE JOINER 32MM X 1 1/4"



FORZA GAS FITTINGS LIST



CODE	SIZE	DESCRIPTION
ELBOW		
FG51616	DN16	FORZA GAS ELBOW 16MM
FG52020	DN20	FORZA GAS ELBOW 20MM
FG52525	DN25	FORZA GAS ELBOW 25MM
FG53232	DN32	FORZA GAS ELBOW 32MM
FG54040	DN40	FORZA GAS ELBOW 40MM
FG55050	DN50	FORZA GAS ELBOW 50MM



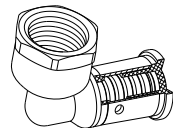
MALE ELBOW		
FG61615	DN16X1/2" MI	FORZA GAS MALE ELBOW 16MM X 1/2"
FG62020	DN20 X 3/4" MI	FORZA GAS MALE ELBOW 20MM X 3/4"
FG62525	DN25 X 1" MI	FORZA GAS MALE ELBOW 25MM X 1"
FG63225	DN32 X 1" MI	FORZA GAS MALE ELBOW 32MM X 1"
FG63232	DN32 X 1 1/4" MI	FORZA GAS MALE ELBOW 32MM X 1 1/4"
FG64025	DN40 X 1" MI	FORZA GAS MALE ELBOW 40MM X 1"
FG65025	DN50 X 1" MI	FORZA GAS MALE ELBOW 50MM X 1"



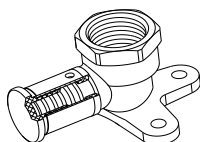
MALE LUGGED ELBOW		
FG66161565	DN16X1/2" MIX65MM	FORZA GAS LUGGY 16MM X 1/2" M.I X 65MM
FG66161590	DN16X1/2" MIX90MM	FORZA GAS LUGGY 16MM X 1/2" M.I X 90MM
FG66201565	DN20X1/2" MIX65MM	FORZA GAS LUGGY 20MM X 1/2" M.I X 65MM
FG66201595	DN20X1/2" MIX95MM	FORZA GAS LUGGY 20MM X 1/2" M.I X 95MM



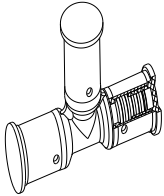
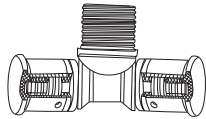
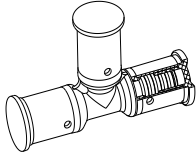
EXTENDED MALE LUGGED ELBOW		
FG661615200	DN16X1/2" MIX200MM	FORZA GAS LUGGY 16MM X 1/2" M.I X 200MM
FG662015200	DN20X1/2" MIX200MM	FORZA GAS LUGGY 20MM X 1/2" MI X 200MM
FG662020200	DN20X3/4" MIX200MM	FORZA GAS LUGGY 20MM X 3/4" MI X 200MM
FG662520200	DN25X3/4" MIX200MM	FORZA GAS LUGGY 25MM X 3/4" MI X 200MM
FG662525200	DN25X1" MIX200MM	FORZA GAS LUGGY 25MM X 1" MI X 200MM
FG663225150	DN32 X 1" MI X150MM	FORZA GAS LUGGY 32MM X 1" MI X 150MM
FG663225200	DN32 X 1" MIX200MM	FORZA GAS LUGGY 32MM X1" MI X 200MM



FEMALE ELBOW		
FG71615	DN16 X 1/2" FI	FORZA GAS FEMALE ELBOW 16MM X 1/2"
FG72015	DN20 X 1/2" FI	FORZA GAS FEMALE ELBOW 20MM X 1/2"
FG72020	DN20 X 3/4" FI	FORZA GAS FEMALE ELBOW 20MM X 3/4"
FG72520	DN25 X 3/4" FI	FORZA GAS FEMALE ELBOW 25MM X 3/4"
FG72525	DN25 X 1" FI	FORZA GAS FEMALE ELBOW 25MM X 1"
FG73225	DN 32 X 1" FI	FORZA GAS FEMALE ELBOW 32MM X 1"



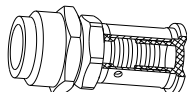
FEMALE LUGGED ELBOW		
FG771615	DN16 X 1/2" FI	FORZA GAS LUGGY 16MM X 1/2" FI
FG772015	DN20 X 1/2" FI	FORZA GAS LUGGY 20MM X 1/2" FI
FG772020	DN20 X 3/4" FI	FORZA GAS LUGGY 20MM X 3/4" FI



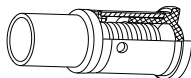
CODE	SIZE	DESCRIPTION
EQUAL TEE		
FG8161616	DN16	FORZA GAS TEE 16MM
FG8202020	DN20	FORZA GAS TEE 20MM
FG8252525	DN25	FORZA GAS TEE 25MM
FG8323232	DN32	FORZA GAS TEE 32MM
FG8404040	DN40	FORZA GAS TEE 40MM
FG8505050	DN50	FORZA GAS TEE 50MM
MALE CENTRE TEE		
FG8161616MT	DN16X16X1/2"	FORZA GAS TEE 16MM X 16MM X 1/2" MI
FG8202020MT	DN20X20X3/4"	FORZA GAS TEE 20MM X 20MM X 3/4" MI
FG8252525MT	DN25X25X1"	FORZA GAS TEE 25MM X 25MM X 1" MI
FG8323232MT	DN32X32X1-1/4"	FORZA GAS TEE 32MM X 32MM X 1-1/4" MI
FG8404040MT	DN40X40X1-1/2"	FORZA GAS TEE 40MM X 40MM X 1-1/2" MI
FG8505050MT	DN50X50X2"	FORZA GAS TEE 50MM X 50MM X 2" MI
CENTRE REDUCING TEE		
FG9202016	DN20 X 20 X 16	FORZA GAS TEE 20MM X 20MM X (16MM)
FG9252516	DN25 X 25 X 16	FORZA GAS TEE 25MM X 25MM X (16MM)
FG9252520	DN25 X 25 X 20	FORZA GAS TEE 25 MM X 25MM X (20MM)
FG9323220	DN32 X 32 X 20	FORZA GAS TEE 32 MM X 32MM X (20MM)
FG9323225	DN32 X 32 X 25	FORZA GAS TEE 32 MM X 32MM X (25MM)
FG9404025	DN40 X 40 X 25	FORZA GAS TEE 40 MM X 40MM X (25MM)
FG9404032	DN40 X 40 X 32	FORZA GAS TEE 40 MM X 40MM X (32MM)
FG9505032	DN50 X 50 X 32	FORZA GAS TEE 50 MM X 50MM X (32MM)
FG9505040	DN50 X 50 X 40	FORZA GAS TEE 50 MM X 50MM X (40MM)
END AND CENTRE REDUCING TEE		
FG9201616	DN20 X 16 X 16	FORZA GAS TEE 20MM X 16MM X (16MM)
FG9251616	DN25 X 16 X 16	FORZA GAS TEE 25MM X 16MM X (16MM)
FG9252020	DN25 X 20 X 20	FORZA GAS TEE 25 MM X 20MM X (20MM)
FG9322525	DN32 X 25 X 25	FORZA GAS TEE 32 MM X 25MM X (25MM)
FG9322520	DN32 X 25 X 20	FORZA GAS TEE 32 MM X 25MM X (20MM)
END REDUCING TEE		
FG9201620	DN20 X 16 X 20	FORZA GAS TEE 20MM X 16MM X (20MM)
FG9251625	DN25 X 16 X 25	FORZA GAS TEE 25MM X 16MM X (25MM)
FG9252025	DN25 X 20 X 25	FORZA GAS TEE 25 MM X 20MM X (25MM)



FORZA GAS FITTINGS LIST

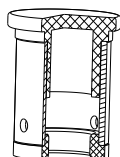


CODE	SIZE	DESCRIPTION
COMPRESSION JOINER		
FGC1615	DN16X1/2"	FORZA GAS COMPRESSION JOINER 16MM
FGC2020	DN20X3/4"	FORZA GAS COMPRESSION JOINER 20MM
FGC2525	DN25X1"	FORZA GAS COMPRESSION JOINER 25MM
FGC3232	DN32X1 1/4"	FORZA GAS COMPRESSION JOINER 32MM
FGC4040	DN40X1 1/2"	FORZA GAS COMPRESSION JOINER 40MM
FGC5050	DN50X2"	FORZA GAS COMPRESSION JOINER 50MM

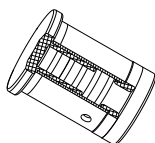


CODE	SIZE	DESCRIPTION
CONNECTING BARB SPIGOT		
FGCB1615M	DN16X1/2"CU	FORZA GAS CONN. BARB 16MM X 1/2" COPPER
FGCB2020M	DN20X3/4"CU	FORZA GAS CONN. BARB 20MM X 3/4" COPPER
FGCB2525M	DN25X1"CU	FORZA GAS CONN. BARB 25MM X 1" COPPER
FGCB3232M	DN32X1-1/4"CU	FORZA GAS CONN. BARB 32MM X 1-1/4" COPPER

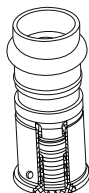
CODE	SIZE	DESCRIPTION
CONNECTING BARB SOCKET		
FGCB1615F	DN16X1/2"CU	FORZA GAS CONN. BARB 16MM X 1/2" COPPER
FGCB2015F	DN20X1/2"CU	FORZA GAS CONN. BARB 20MM X 1/2" COPPER
FGCB2020F	DN20X3/4"CU	FORZA GAS CONN. BARB 20MM X 3/4" COP
FGCB2520F	DN25X3/4"CU	FORZA GAS CONN. BARB 25MM X 3/4" COPPER
FGCB2525F	DN25X1"CU	FORZA GAS CONN. BARB 25MM X 1" COPPER
FGCB3232F	DN32X1-1/4"CU	FORZA GAS CONN. BARB 32MM X 1-1/4" COPPER



CODE	SIZE	DESCRIPTION
COPPER RINGS		
FGCR16	DN16	FORZA GAS COPPER RING 16MM
FGCR20	DN20	FORZA GAS COPPER RING 20MM
FGCR25	DN25	FORZA GAS COPPER RING 25MM
FGCR32	DN32	FORZA GAS COPPER RING 32MM
FGCR40	DN40	FORZA GAS COPPER RING 40MM
FGCR50	DN50	FORZA GAS COPPER RING 50MM



CODE	SIZE	DESCRIPTION
END STOPPER		
FGS16	DN16	FORZA GAS STOPPER 16MM
FGS20	DN20	FORZA GAS STOPPER 20MM
FGS25	DN25	FORZA GAS STOPPER 25MM
FGS32	DN32	FORZA GAS STOPPER 32MM



CODE	SIZE	DESCRIPTION
COPPER PRESS ADAPTORS		
FGCP1615	DN16X1/2"CU	FORZA GAS 16MM X COPPER PRESS 1/2"
FGCP2020	DN20X3/4"CU	FORZA GAS 20MM X COPPER PRESS 3/4"
FGCP2525	DN25X1"CU	FORZA GAS 25MM X COPPER PRESS 1"
FGCP3232	DN32X1-1/4"CU	FORZA GAS 32MM X COPPER PRESS 1-1/4"

SIZING TABLES FOR CRIMP FITTINGS (NATURAL GAS)

FLOW THROUGH HDPE/AL/PEX COMPOSITE PIPE CRIMPED FITTINGS (MJ/H)

HIGH PRESSURE PRESSURE DROP 0.25KPA (METER PRESSURE 2.75KPA)									
LENGTH OF STRAIGHT PIPE IN METRES									
NOM. SIZE	2	4	6	8	10	12	14	16	18
16MM	161	111	89	76	68	61	56	52	49
20MM	323	222	178	153	135	122	113	105	98
25MM	629	433	348	298	264	239	220	205	192
32MM	1267	871	699	598	530	480	442	411	386
40MM	2930	1899	1474	1232	1058	948	865	799	730
50MM	5299	3573	2837	2417	2103	1899	1741	1624	1492

LENGTH OF STRAIGHT PIPE IN METRES									
NOM. SIZE	20	25	30	35	40	45	50	55	60
16MM	46	41	37	34	32	30	28	26	23
20MM	93	82	75	69	64	60	57	54	51
25MM	181	161	146	134	125	117	110	105	100
32MM	364	323	293	269	250	235	222	211	201
40MM	689	598	537	479	442	411	386	359	343
50MM	1417	1248	1132	1013	950	891	846	787	752

HIGH PRESSURE (VIC, SA, QLD, TAS AND NT) PRESSURE DROP 0.75KPA (METER PRESSURE 2.75KPA)									
LENGTH OF STRAIGHT PIPE IN METRES									
NOM. SIZE	2	4	6	8	10	12	14	16	18
16MM	292	201	161	138	122	111	102	95	89
20MM	585	402	323	276	245	222	204	190	178
25MM	1142	785	630	539	478	433	398	371	348
32MM	2295	1577	1267	1084	961	871	801	745	699
40MM	5303	3438	2668	2229	1915	1717	1565	1446	1321
50MM	9591	6467	5135	4375	3806	3437	3151	2940	2701

LENGTH OF STRAIGHT PIPE IN METRES									
NOM. SIZE	20	25	30	35	40	45	50	55	60
16MM	84	75	68	62	58	54	51	49	46
20MM	168	149	135	124	116	109	103	97	93
25MM	328	291	264	243	226	212	200	190	181
32MM	660	585	530	488	454	426	402	382	364
40MM	1274	1082	972	867	800	745	699	649	620
50MM	2564	2260	2049	1833	1720	1612	1531	1424	1362



SIZING TABLES FOR CRIMP FITTINGS (NATURAL GAS)

FLOW THROUGH HDPE/AL/PEX COMPOSITE PIPE CRIMPED FITTINGS (MJ/H)

HIGH PRESSURE (NSW, WA) PRESSURE DROP 1.50KPA (METER PRESSURE 2.75KPA)									
LENGTH OF STRAIGHT PIPE IN METRES									
NOM. SIZE	2	4	6	8	10	12	14	16	18
16MM	426	292	235	201	178	161	148	138	130
20MM	851	585	470	402	356	323	297	276	259
25MM	1661	1142	917	785	695	630	580	539	506
32MM	3339	2295	1843	1577	1398	1267	1165	1084	1017
40MM	7742	5019	3896	3255	2795	2506	2285	2112	1928
50MM	14003	9442	7497	6388	5557	5018	4600	4293	3944

LENGTH OF STRAIGHT PIPE IN METRES									
NOM. SIZE	20	25	30	35	40	45	50	55	60
16MM	122	109	98	90	84	79	75	71	68
20MM	245	217	197	181	168	158	149	142	135
25MM	478	424	384	353	328	308	291	276	264
32MM	961	851	772	710	660	620	585	556	530
40MM	1820	1579	1418	1266	1168	1087	1021	948	905
50MM	3743	3299	2992	2676	2511	2354	2235	2079	1988



SIZING TABLES FOR CRIMP FITTINGS (NATURAL GAS)

FLOW THROUGH HDPE/AL/PEX COMPOSITE PIPE CRIMPED FITTINGS (MJ/H)

LOW PRESSURE | PRESSURE DROP 0.075KPA (METER PRESSURE 1.1KPA)

NOM. SIZE	LENGTH OF STRAIGHT PIPE IN METRES								
	2	4	6	8	10	12	14	16	18
16MM	84	58	46	40	35	32	29	26	23
20MM	168	116	93	80	70	64	59	55	51
25MM	328	226	181	155	138	125	115	107	100
32MM	660	454	364	312	276	250	230	214	201
40MM	1620	1064	838	700	615	553	503	467	434
50MM	2973	1942	1518	1273	1114	997	906	838	779

LENGTH OF STRAIGHT PIPE IN METRES

NOM. SIZE	20	25	30	35	40	45	50	55	60
16MM	21	17	14	12	11	9	8	8	7
20MM	48	43	39	35	30	27	24	22	20
25MM	95	84	76	70	65	61	58	55	52
32MM	190	168	153	140	131	123	116	110	105
40MM	408	355	320	290	270	253	236	223	211
50MM	731	637	570	519	478	447	419	395	375

LOW PRESSURE | PRESSURE DROP 0.12KPA (METER PRESSURE 1.25KPA)

NOM. SIZE	LENGTH OF STRAIGHT PIPE IN METRES								
	2	4	6	8	10	12	14	16	18
16MM	109	75	60	51	45	41	38	35	33
20MM	217	149	120	103	91	82	76	70	66
25MM	424	291	234	200	177	161	148	138	129
32MM	851	585	470	402	356	323	297	276	259
40MM	2090	1372	1080	903	794	713	649	602	560
50MM	3835	2505	1959	1642	1438	1286	1169	1081	1005

LENGTH OF STRAIGHT PIPE IN METRES

NOM. SIZE	20	25	30	35	40	45	50	55	60
16MM	31	27	22	19	17	15	13	12	11
20MM	62	55	50	46	43	40	38	35	32
25MM	122	108	98	90	84	79	74	71	67
32MM	245	217	197	181	168	158	149	142	135
40MM	527	458	413	374	349	327	305	287	272
50MM	943	822	735	670	617	577	540	510	484



SIZING TABLES FOR CRIMP FITTINGS (LPG)

FLOW THROUGH HDPE/AL/PEX COMPOSITE PIPE CRIMPED FITTINGS (MJ/H)

LPG | PRESSURE DROP 0.25KPA (METER PRESSURE 2.75KPA)

NOM. SIZE	LENGTH OF STRAIGHT PIPE IN METRES								
	2	4	6	8	10	12	14	16	18
16MM	277	190	153	131	116	105	97	90	84
20MM	554	381	306	262	232	210	193	180	169
25MM	1081	743	597	511	453	410	377	351	329
32MM	2173	1494	1199	1027	910	824	758	706	662
40MM	4570	2963	2300	1921	1650	1479	1349	1247	1138
50MM	8266	5574	4426	3771	3281	2962	2716	2534	2328

NOM. SIZE	LENGTH OF STRAIGHT PIPE IN METRES								
	20	25	30	35	40	45	50	55	60
16MM	80	71	64	59	55	51	49	46	44
20MM	159	141	128	118	110	103	97	92	88
25MM	311	276	250	230	214	201	189	180	172
32MM	625	554	502	462	430	403	381	362	345
40MM	1075	932	837	747	690	642	603	560	535
50MM	2210	1948	1766	1580	1482	1389	1320	1227	1174

LPG | PRESSURE DROP 10.0KPA (METER PRESSURE 70.0KPA)

NOM. SIZE	LENGTH OF STRAIGHT PIPE IN METRES								
	2	4	6	8	10	12	14	16	18
16MM	2648	1820	1462	1251	1109	1005	924	860	807
20MM	5297	3640	2923	2502	2218	2009	1848	1720	1614
25MM	10337	7104	5705	4883	4327	3921	3607	3356	3149
32MM	20779	14281	11468	9815	8699	7882	7251	6746	6330
40MM	43691	28325	21987	18368	15775	14144	12897	11919	10881
50MM	79025	53284	42309	36052	31363	28318	25960	24225	22257

NOM. SIZE	LENGTH OF STRAIGHT PIPE IN METRES								
	20	25	30	35	40	45	50	55	60
16MM	762	675	612	563	524	491	464	441	421
20MM	1524	1351	1224	1126	1048	983	928	882	841
25MM	2974	2636	2388	2197	2044	1918	1812	1721	1642
32MM	5979	5299	4801	4417	4109	3856	3642	3459	3300
40MM	10273	8912	8005	7146	6594	6134	5761	5351	5110
50MM	21125	18619	16885	15101	14170	13283	12614	11732	11222



GAS CRIMP INSTALLATION INSTRUCTIONS

The following instructions explain the correct installation procedure for FORZA GAS Crimp fittings in conjunction with FORZA GAS pipe.

1



With a set of pipe cutters /shears cut the pipe at 90° ensuring the pipe is square on the end.

2

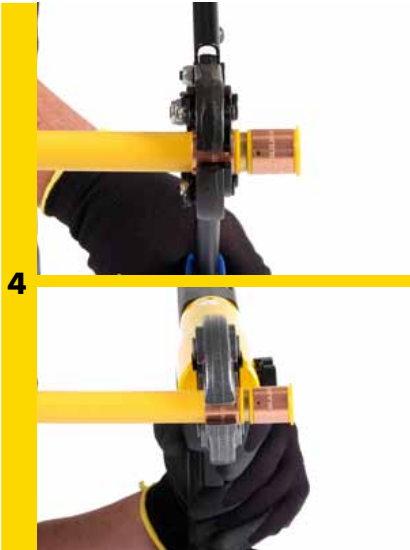


Round the cut end of pipe with the rounding tool.

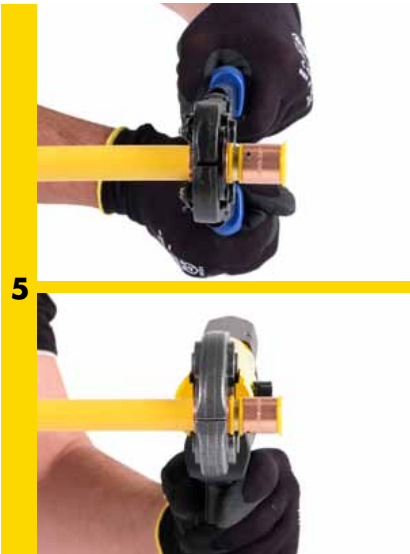
3



Push fitting onto pipe until pipe is visible through the viewing port on copper ring. This ensures that pipe has been inserted to the correct depth.



Position tool so that the jaws of the tool are in the centre of the copper ring.



Proceed to crimp the fitting until jaws of tool are completely closed.



GAS CRIMP INSTALLATION INSTRUCTIONS

The following instructions explain the correct installation procedure for FORZA GAS Crimp fittings in conjunction with FORZA GAS pipe.

6



Once crimp is complete test with gauge. Gauge will slide over copper ring if it has been done correctly.



Battery Crimping Tool



Manual Crimping Tool

Warranty



Forza Gas pipe and fittings guaranteed against manufacturing defects for a period of 50 YEARS when installed and used in accordance of the Australian, New Zealand and South American Plumbing code and or the LOCAL or STATE Authority when installed by a licensed PLUMBER.



Forza Gas Pipe & Fittings comply with the standards as set out in AS 4176.8 - 2010 Polyethylene/aluminium and cross-linked polyethylene/aluminium macro-composite pipe system for pressure applications.

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