

ISO9001/14001/45000

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EP Press Piping System For Gas



We, IPC Piping system Co. Ltd, with a registered capital of USD 20 million and turnover USD 200 million 2023, are a national high-tech enterprise, certified by ISO9001, ISO14001 and also OHSAS18001/ISO45001. Our company is the world leading manufacturer of Carbon steel and Stainless steel Press Fitting and piping system.

We have established three manufacturing bases in China, one is in Taizhou, Zhejiang and another one is in Xingtai, Hebei province and a New Smart Factory in Jiaxing, Zhejiang which was finished in May, 2021. The new base is a first advanced "lighthouse model" factory in this industry in China. All production bases are equipped with leading automated production facilities and lines. We also use advanced technology of Electrophoresis surface treatment and nanotechnology epoxy resin coating. Through excellent innovation, research and development, our products are widely used in Water Supply, Gas, Fire Protection, Municipal Water Treatment, HVAC and other supporting application.

Our products have been certified by DVGW, WRAS, CSTB, ACS, GDV, and VDS. Especially for thick-wall carbon press piping, we have CUPC, FM and UL certificates. We have independent large CNAS approved laboratories with various inspection facilities for fittings and piping system. Such as material test and dimension calibration, spectrometer, profile scanner, CMM, metallographic analyzer, salt spray test, pull-out test, pneumatic leakage test, eddy current testing line, bursting test, tumbling test, life cycle test, etc.

We inherit to the business philosophy of energy saving, environmental and sustainable development to lead the industry. Our company adheres to the strategic policy of "Making quality products, Setting a model for the business", and friendly cooperates with domestic and foreign customers with high-quality services, and work together to win splendid future!

ADVANTAGE

We are committed to provide not only high level products but also demand of customers. We have been dedicating to help customers achieve success and continuously upgrade consumers experience by providing innovative pipeline solutions and managing the entire life cycle of the projects. Based on the traditional gas pipeline connection, our ep quick-installation gas line system provides better performance in efficiency, safety, service lifetime and almost no maintenance needed.



FAST FIT

(Improve Installation Efficiency 300%)



KNOW HOW

(Life Time: 30 Years)



SAFE & ENVIRONMENTAL FRIENDLY

(Seal Ring Usable for 70 Years)



COST EFFICIENT

(Almost No Maintenance Needed)

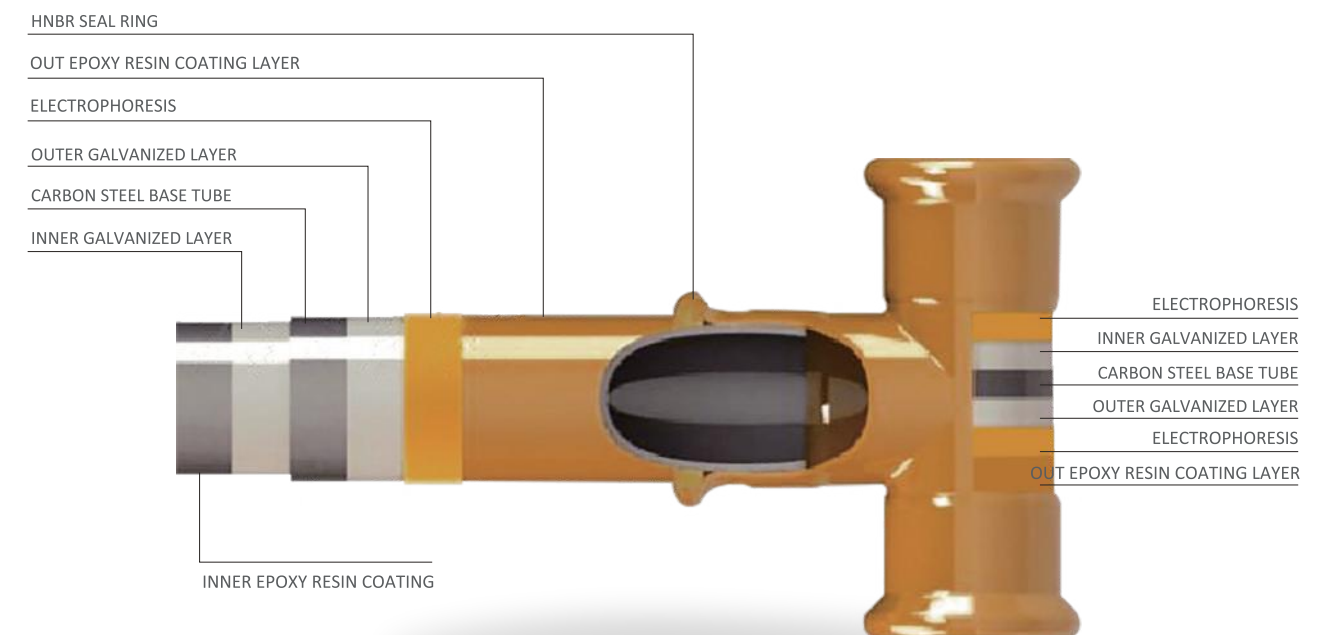


HIGHEST GRADE OF NATIONAL GREEN BUILDING MATERIALS
AUTHORITY CERTIFICATION BY CABR

GERMAN EP TECHNOLOGY

Through our invented technology of EP (Electrical Epoxy Resin Coating) to replace the traditional surfacetreatment , we are dedicated to reduce the environmental pollution greatly, but products with much better corrosion resistance and longer lifetime.

EP is a water soluble coating technology which was first developed by German auto industry to improve the corrosion resistance of car and frame welding. With our innovation on improving the EP technology, we apply it into our pipeline systems. In 30 minutes of high-temperature curing, a high corrosion-resistant EP coating is formed all over the internal and external surface of tubes and fittings. The incredible test result of more than 1000 hours during the neutral salt spray to prove our products quality whilst comparing 96 hours of the cold galvanizing and 200 hours by hot-dip galvanizing only.

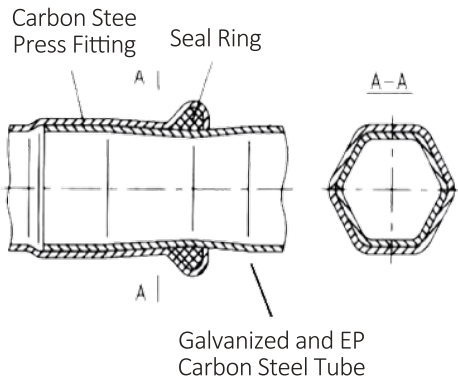


COATING: INTERNAL AND EXTERNAL COATING, GERMAN EP TECHNOLOGY

- NEUTRAL SALT SPRAY >1000 HOURS
- EXCELLENT CORROSION RESISTANCE, DESIGN 30 YEARS
- STRONG ADHESION COLLISION RESISTANCE
- EXCELLENT FLAME RETARDANCY AND ELECTRICITY INSULATION
- STRONG UV RESISTANCE AND WEATHER RESITANCE, EXCELLENT COLOR RETENTION STRONG ADHESION COLLISION RESISTANCE

TECHNOLOGY OF PRESS FITTING

Since the invention of press connection various regions and countries around the world have gradually abandoned traditional piping connection such as welding, thread, etc. but accept this reliable, fast and cost-saving press fitting. It has been widely applied to many metal piping. The sealing of pressing is to compress the elastic rubber O-ring and press tightly in the radial direction without any gap.



Pulling out Resistance : the pressed part is deformed to be smaller than the pipeline. Press fitting is quickly installed and an ideal fitting for harsh installation environment. Avoid the labor like threading, welding, etc. The time for one press cycle is less than half of the traditional threaded fitting. The press technology provides simple installation whether in narrow pipeline well or in water seepage trench.

PULLOUT RESISTANCE OVER 1200N, 7 SECONDS INSTALLATION, OVER 30 YEARS LIFETIME

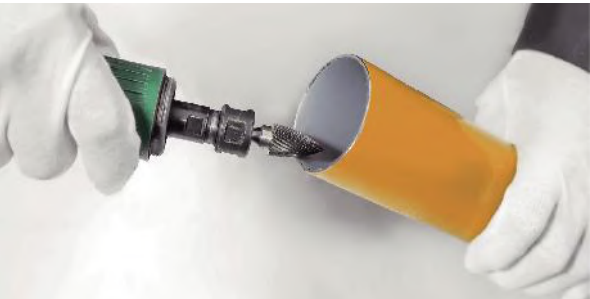
	TOOLS AND ACCESSORIES	PROCESS PROCEDURE	INSTALLER QUALIFICATION	CORROSION RESISTANCE	TIME FOR INSTALLATION	LABOR DEMAND
WELDING CONNECTION	Heavy tools and numerous accessories	Potential risk of safety with open flame welding	Skilled welding operator with 3-5 years of experience	Repeated painting process	More than 60 minutes	6 operators
THREAD CONNECTION	Heavy tools and numerous accessories	Heavy and complicated threading operation	Skilled operator with 1-2 years of experience	Repeated painting process	30 minutes	4 operators
PRESS QUICK INSTALLATION CONNECTION	Easy tools and simple cross checking	One press done	Simple training Quick start	NO EP coating, Painting free, Healthy and Environment friendly	15 minutes	2 operators

ONLY 7 SECONDS FOR EACH PRESS



1.TUBE CUTTING

It is important to ensure that the tube is cut completely square. Tube ends should be clean and free from scratches not less than the socket length. Check the tube has retained its shape.



2.DEBURRING

Make sure that the internal and external tube end is free from burrs or sharp edges by using a deburring tool to prevent damage to the O-ring. Then wipe the tube end clean to avoid damaging the O-ring on tube insertion.



3.INSERTION DEPTH MARKING

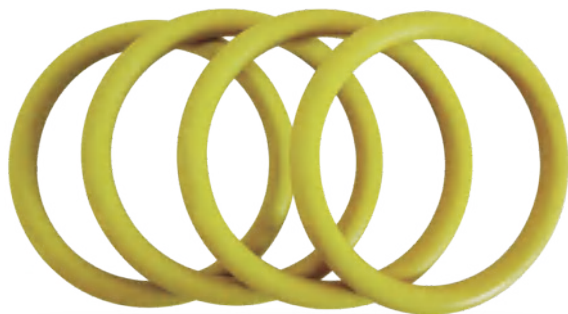
The tube must be fully inserted into the fitting until it reaches the tube stop in order to make a perfect joint. Marking insertion depth will ensure that any tube movement is detected, which is especially important if the joints are to be pressed at a later time.



4.COMPLETE THE JOINT

Ensure that the correct size jaw for the fitting is inserted into the tool. The jaws must be placed square on the fitting. Depress the trigger/button to begin the compression cycle of the tool. This is complete when the mouth of the fitting is fully enclosed by the jaws. Now release the jaws from around the fitting.

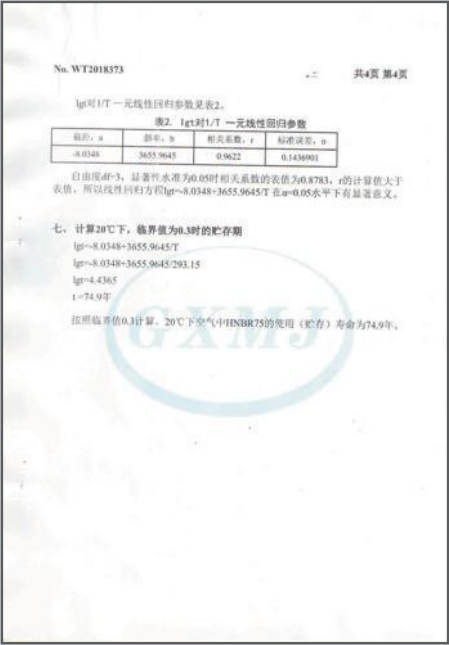
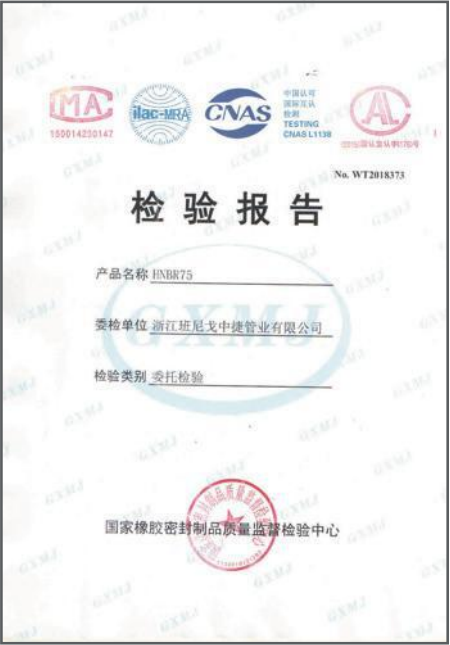
O-RING LIFETIME: 70 YEARS



Product Color	Temperature Range	Max. Working Pressure	Product Compatibility
Yellow	-60°C-150°C	1.6Mpa	Fuel Gas, Fuel Oil, Petroleum.

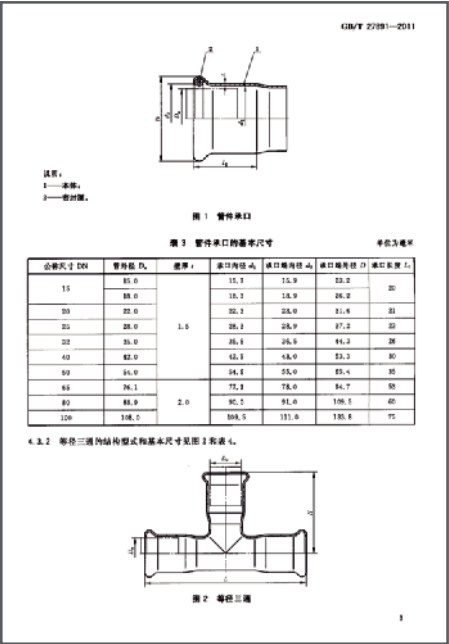
- Significant anti-abrasion performance under extremely hazardous conditions.
 - Outstanding expanding properties to achieve liquid resistance(oils that contain corrosive additiveEs)
 - Good heat resistance. Ozone resistance. Weathering aging resistance. Resistance to chemical acid and alkali.
- Maintains good mechanical properties even under rising temperature.
 - Excellent acid resistance(sulfuretted hydrogen) and resistance to amine / oil mixtures.

Internationally Recognized Sealing Material for Fuel Gas Press Pipe - Hydrogenated Nitrile Butadiene Rubber(HNBR)

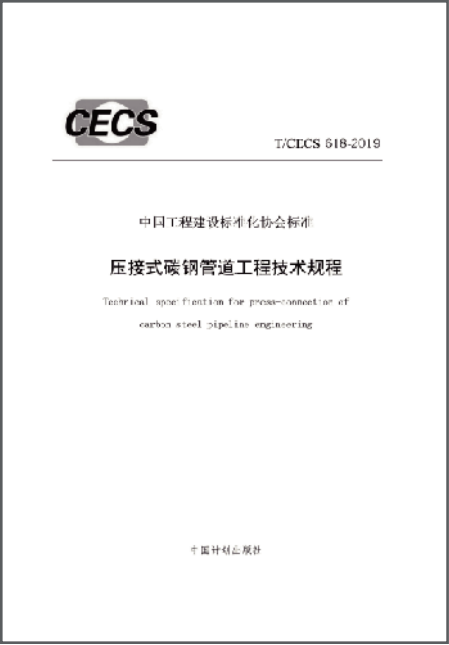


STANDARD

National Standard Carbon Steel Press-Fittings



Technical Specifications for Press Connections of Carbon Steel Pipeline Engineering Industrial Standard Press Connections Carbon Steel Tube and Fittings Press Connections DN12-DN50. Matching Pipe Thickness: 1.5mm. DN65-DN100: Matching Pipe Thickness: 2.0mm.





PRODUCT CATALOG

Press Fitting

Carbon Steel Pipe



Code	DN	OD(mm)	Wall Thcikness(mm)
28571220000	12	15	1.5
28571230000	15	18	1.5
28571230001	20	22	1.5
28571240000	25	28	1.5
28571250000	32	35	1.5
28571260000	40	42	1.5
28571270000	50	54	1.5
28571280000	65	76.1	2.0
28571280001	80	89.9	2.0
28571280002	100	108	2.0

Press Fitting

Coupling



Code	DN	OD(mm)
28601020000	12	15
28601030000	15	18
28601030001	20	22
28601040000	25	28
28601050000	32	35
28601060000	40	42
28601070000	50	54
28601080005	65	76.1
28601080002	80	89.9
28601080001	100	108

Press Fitting

Reduced Coupler



Code	DN	OD(mm)
28601020003	20x12	22x15
28601030003	20x15	22x18
28601020004	25x12	28x15
28601030004	25x15	28x18
28601030007	25x20	28x22
28601020005	32x12	35x15
28601030005	32x15	35x18
28601030008	32x20	35x22
28601040002	32x25	35x28
28601020006	40x12	42x15
28601030006	40x15	42x18
28601030009	40x20	42x22
28601040003	40x25	42x28
28601050002	40x32	42x35
28601030044	50x15	54x18
28601030010	50x20	54x22
28601040004	50x25	54x28
28601050003	50x32	54x35
28601060002	50x40	54x42
28601040011	65x25	76.1x28
28601080029	65x32	76.1x35
28601080030	65x40	76.1x42
28601080018	65x50	76.1x54
28601080020	80x32	89.9x35

Press Fitting

Reduced Coupler



Code	DN	OD(mm)
28601080021	80x40	88.9x42
28601080017	80x50	88.9x54
28601080016	80x65	88.9x76
28601080022	100x40	108x42
28601080047	100x50	108x54
28601080015	100x65	108x76
28601080024	100x80	108x89

Press Fitting

Fitting Reducer



Code	DN	OD(mm)
28601040036	20x25	22x28
28601060017	32x35	32x35
28601060040	40x32	40x35
28601060027	40x42	40x42
28601070019	50x32	50x35
28601070020	50x40	50x42
28601070027	50x54	50x54
28601080057	65x32	76.1x35
28601080012	65x40	76.1x42
28601080011	65x50	76.1x54

Press Fitting	Slip Coupling		
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Code	DN	OD(mm)
28601020015	12	15
28601030040	15	18
28601030002	20	22
28601040001	25	28
28601050001	32	35
28601060001	40	42
28601070024	50	54
28601080009	65	76.1
28601080038	80	89.9
28601080039	100	108

Press Fitting	End Cap		
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Code	DN	OD(mm)
28601520000	12	15
28601030016	15	18
28601530000	20	22
28601540000	25	28
28601050006	32	35
28601560000	40	42
28601070002	50	54
28601080004	65	76.1
28601580000	80	89.9
28601580001	100	108

Press Fitting	Female Straight Adapter		
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Code	DN	OD(mm)
28601020008	12×RP1/2	15×RP1/2
28601030013	15×RP1/2	18×RP1/2
28601030014	20×R1/2	22×R1/2
28601030012	20×RP3/4	22×RP3/4
28601030015	20×RP1	22×RP1
28601040006	25×RP1	28×RP1
28601050029	32×RP1/2	35×RP1/2
28601050005	32×RP1	35×RP1
28601050004	32×RP1.1/4	35×RP1.1/4
28601050034	32×RP1.1/2	35×RP1.1/2
28601060005	40×RP1.1/4	42×RP1.1/4
28601060003	40×RP1.1/2	42×RP1.1/2
28601060004	40×RP2	42×RP2
28601070025	50×RP1	54×RP1
28601070034	50×RP1.1/4	54×RP1.1/4
28601070001	50×RP1.1/2	54×RP1.1/2
28601070014	50×RP2	54×RP2

Press Fitting	Male Straight Adapter		
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Code	DN	OD(mm)
28601020009	12×R1/2	15×R1/2
28601030037	15×R1/2	18×R1/2
28601030034	20×R1/2	22×R1/2
28601030018	20×R3/4	22×R3/4
28601030057	20×R1	22×R1
28601040016	25×R1	28×R1
28601050008	32×R1	35×R1
28601050030	32×R1.1/4	35×R1.1/4
28601060006	40×R1.1/4	42×R1.1/4
28601060007	40×R1.1/2	42×R1.1/2
28601070003	50×R1.1/2	54×R1.1/2
28601070005	50×R2	54×R2
28601080032	65×R2.1/2	76.1×R2.1/2
28601080036	80×R3	88.9×R3

Press Fitting	Straight Female Adaptor with Swivel Nut		
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Code	DN	OD(mm)
28601020014	15×G1/2	15×G1/2
28601030030	18×G1/2	18×G1/2
28601030032	22×G3/4	22×G3/4
28601040015	28×G1	28×G1
28601050017	35×G1.1/4	35×G1.1/4
28601060013	42×G1.1/2	42×G1.1/2
28601070011	54×G2	54×G2

Press Fitting	90 ° Equal Bend		
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Code	DN	OD(mm)
28601120000	12	15
28601130000	15	18
28601130001	20	22
28601140000	25	28
28601150000	32	35
28601160000	40	42
28601170000	50	54
28601180000	65	76.1
28601180002	80	89.9
28601180001	100	108


Press Fitting	90 ° Street Bend		
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Code	DN	OD(mm)
28601120001	12	15
28601130018	15	18
28601130015	20	22
28601140001	25	28
28601150009	32	35
28601160007	40	42
28601170007	50	54
28601180004	65	76.1
28601180007	80	89.9
28601180008	100	108

Press Fitting	90° Female Elbow		
	Code	DN	OD(mm)
	28601120006	12×RP1/2	15×RP1/2
	28601130011	15×RP1/2	18×RP1/2
	28601130010	20×RP1/2	22×RP1/2
	28601130016	20×RP3/4	22×RP3/4
	28601140006	25×RP1	28×RP1
	28601150014	32×RP1/2	35×RP1/2
	28601150004	32×RP1	35×RP1
	28601150003	32×RP1.1/4	35×RP1.1/4
	28601160004	40×RP1.1/2	42×RP1.1/2
	28601170003	50×RP2	54×RP2


Press Fitting	90° Male Elbow		
	Code	DN	OD(mm)
	28601120007	12×RP1/2	15×RP1/2
	28601130012	15×RP1/2	18×RP1/2
	28601130013	20×RP1/2	22×RP1/2
	28601140013	20×RP3/4	22×RP3/4
	28601140007	25×RP1	28×RP1
	28601150008	32×RP1.1/4	35×RP1.1/4
	28601160005	40×RP1.1/2	42×RP1.1/2
	28601170004	50×RP2	54×RP2

Press Fitting	45° Obtuse Equal Elbow		
	Code	DN	OD(mm)
	28601120002	12	15
	28601130002	15	18
	28601130003	20	22
	28601140002	25	28
	28601150001	32	35
	28601160001	40	42
	28601170001	50	54
	28601180003	65	76.1
	28601180010	80	89.9
	28601180009	100	108


Press Fitting	45° Obtuse Street Elbow		
	Code	DN	OD(mm)
	28601120012	12	15
	28601130019	15	18
	28601130020	20	22
	28601140012	25	28
	28601150010	32	35
	28601160006	40	42
	28601170006	50	54
	28601180005	65	76.1
	28601180011	80	89.9
	28601180012	100	108

Press Fitting	Crossover		
	Code	DN	OD(mm)
	28601020013	12	15
	28601030036	15	18
	28601030017	20	22
	28601040007	25	28


Press Fitting	Equal Tee		
	Code	DN	OD(mm)
	28601220000	12	15
	28601230001	15	18
	28601230000	20	22
	28601240000	25	28
	28601250000	32	35
	28601260000	40	42
	28601270000	50	54
	28601280003	65	76.1
	28601280002	80	89.9
	28601280001	100	108

Press Fitting	Tee with Male Thread Branch and End		
	Code	DN	OD(mm)
	28601230011	20xR1/2xR1/2	22xR1/2xR1/2
	28601230015	15xR1/2xR1/2	18xR1/2xR1/2
	28601230024	15xR1/2xR3/4	18xR1/2xR3/4
	28601230020	20xR1/2xR3/4	22xR1/2xR3/4

Press Fitting	Tee with Female Thread Branch		
	Code	DN	OD(mm)
	28601220001	12×Rp1/2	15×Rp1/2
	28601230007	15×Rp1/2	18×Rp1/2
	28601230006	20×Rp1/2	22×Rp1/2
	28601230005	20×Rp3/4	22×Rp3/4
	28601240004	25×Rp1/2	28×Rp1/2
	28601240005	25×Rp1	28×Rp1
	28601250005	32×Rp1/2	35×Rp1/2
	28601250016	32×Rp1	35×Rp1
	28601250006	32×Rp1.1/4	35×Rp1.1/4
	28601260006	40×Rp1/2	42×Rp1/2
	28601260007	40×Rp1	42×Rp1
	28601260008	40×Rp1.1/4	42×Rp1.1/4
	28601270007	50×Rp1/2	54×Rp1/2
	28601270022	50×Rp1	54×Rp1
	28601270008	50×Rp1.1/4	54×Rp1.1/4
	28601270009	50×Rp1.1/2	54×Rp1.1/2
	28601270010	50×Rp2	54×Rp2
	28601280025	65×Rp3/4	76×Rp3/4
	28601280026	65×Rp2	76×Rp2
	28601280027	80×Rp3/4	89×Rp3/4
	28601280028	80×Rp2	89×Rp2
	28601280029	100×Rp3/4	108×Rp3/4
	28601280030	100×Rp2	108×Rp2

Press Fitting	Reduced Tee		
	Code	DN	OD(mm)
	28601230003	20×12	22×15
	28601230004	20×15	22×18
	28601240002	25×12	28×15
	28601240003	25×15	28×18
	28601240001	25×20	28×22
	28601250009	32×12	35×15
	28601250002	32×15	35×18
	28601250003	32×20	35×22
	28601250004	32×25	35×28
	28601260003	40×12	42×15
	28601260005	40×15	42×18
	28601260002	40×20	42×22
	28601260004	40×25	42×28
	28601260001	40×32	42×35
	28601270006	50×12	54×15
	28611270003	50×15	54×18
	28601270002	50×20	54×22
	28601270004	50×25	54×28
	28601270001	50×32	54×35
	28601270003	50×40	54×42
	28601280000	65×25	76.1×28
	28601280031	65×32	76.1×35
	28601280006	65×40	76.1×42

Press Fitting	Reduced Tee		
	Code	DN	OD(mm)
	28601280007	65×50	76.1×54
	28601280032	80×20	88.9×22
	28601280033	80×25	88.9×28
	28601280034	80×32	88.9×35
	28601280035	80×40	88.9×42
	28601280036	80×50	88.9×54
	28601280037	80×65	88.9×76.1
	28601280038	100×20	108×22
	28601280039	100×25	108×28
	28601280040	100×32	108×35
	28601280041	100×40	108×42
	28601280042	100×50	108×54
	28601280043	100×60	108×65
	28601280019	100×80	108×88.9

Press Fitting	Tee with Male Thread Branch		
	Code	DN	OD(mm)
	28601220002	12×R1/2	15×R1/2
	28601280044	15×R1/2	18×R1/2
	28601230008	20×R1/2	22×R1/2
	28601230009	20×R3/4	22×R3/4
	28601240006	25×R1/2	28×R1/2
	28601240010	25×R1	28×R1

Press Fitting

Tee with Male Thread Branch



Code	DN	OD(mm)
28601250007	32×R1/2	35×R1/2
28601250015	32×R3/4	35×R3/4
28601250016	32×R1	35×R1
28601250013	32×R1.1/4	35×R1.1/4
28601260010	40×R1/2	42×R1/2
28601260021	40×R3/4	42×R3/4
28601260016	40×R1	42×R1
28601260017	40×R1.1/4	42×R1.1/4
28601270011	50×R1/2	54×R1/2
28601270023	50×R3/4	54×R3/4
28601270020	50×R1.1/4	54×R1.1/4
28601270021	50×R1.1/2	54×R1.1/2
28601270012	50×R2	54×R2
28601280045	65×R3/4	76.1×R3/4
28601280046	65×R2	76.1×R2
28601280047	80×R3/4	89.9×R3/4
28601280048	80×R2	89.9×R2
28601280049	100×R3/4	108×R3/4
28601280050	100×R2	108×R2

卡压式管件

Tee with Female Thread Branch and End




Code	DN	OD(mm)
28601230016	15×RP1/2×RP1/2	18×RP1/2×RP1/2
28601230017	20×RP1/2×RP1/2	22×RP1/2×RP1/2


Press Fitting


90° Reduced Elbow





Code	DN	OD(mm)
28601130022	15×12	18×15
28601120003	20×12	22×15
28601130021	20×15	22×18
28601120004	25×12	28×15
28601130004	25×15	28×18
28601130007	25×20	28×22
28601120005	32×12	35×15
28601130005	32×15	35×18
28601130008	32×20	35×22
28601140003	32×25	35×28
28511160006	40×12	42×15
28601130006	40×15	42×18
28601130009	40×20	42×22
28601140004	40×25	42×28
28601150002	40×32	42×35
28601120010	50×12	54×15
28601170011	50×15	54×18
28601170012	50×20	54×22
28601170005	50×25	54×28
28601150007	50×32	54×35
28601160002	50×40	54×42

Press Fitting	Reduced Cross		
	Code	DN	OD(mm)
	28601320001	25×12	28×15
	28601330002	25×15	28×18
	28601320002	32×12	35×15
	28601350001	32×15	35×18
	28601350003	32×20	35×22
	28601320003	40×12	42×15
	28601360001	40×15	42×18
	28601360003	40×20	42×22
	28601320004	50×12	54×15
	28601370001	50×15	54×18
	28601330000	50×20	54×22

Press Fitting	Equal Cross		
	Code	DN	OD(mm)
	28601350002	32	35
	28601360002	40	42
	28601370000	50	54

Press Fitting	Flange Adapter		
	Code	DN	OD(mm)
	28601020010	12	15
	28601030042	15	18
	28601030043	20	22
	28601040020	25	28
	28601050018	32	35
	28601060015	40	42
	28601070006	50	54
	28601080014	65	76.1
	28511580001	80	89.9
	28511580000	100	108

Press Fitting	Tee with Male Thread Elbow for Gas Meter		
	Code	DN	OD(mm)
	28601230023	15×R1/2	18×R1/2
	28601230010	20×R1/2	22×R1/2
	28601240007	25×R1/2	28×R1/2
	28601250008	32×R1/2	35×R1/2
	28601260012	40×R1/2	42×R1/2

Press Fitting	Cap with Male Thread Elbow for Gas Meter		
	Code	DN	OD(mm)
	28601130027	15×R1/2	18×R1/2
	28601130017	20×R1/2	22×R1/2
	28601140010	25×R1/2	28×R1/2
	28601150013	32×R1/2	35×R1/2
	28601160012	40×R1/2	42×R1/2

Press Fitting



C Gas Meter Fitting

Code	DN	OD(mm)
28261130028	15×M30×2×200	18×M30×2×200
28261120035	15×M30×2×500	18×M30×2×500
28261120015	15×M30×2×70×200	18×M30×2×70×200
28261120016	15×M30×2×150×300	18×M30×2×150×300

Press Fitting



Tee with Female Thread End

Code	DN	OD(mm)
28601230013	15x15xRp1/2	18x18xRp1/2
28601230018	20x20xRp3/4	22x22xRp3/4
28601240011	25x25xRp1	28x28xRp1
28601250014	32x32xRp1.1/4	35x35xRp1.1/4
28601260018	40x40xRp1.1/2	42x42xRp1.1/2
28601270015	50x50xRp2	54x54xRp2

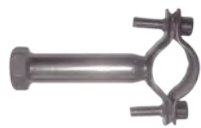
Press Fitting



Electrical Continuity and Lightning Protection Fitting

Code	DN	OD(mm)
28601050037	32	35
28601060033	40	42
28601070031	50	54

Bracket



Stainless Steel Bracket

Code	DN	OD(mm)
28262020001	15×55mm	18×55
28262030002	20×55mm	22×55
28262040001	25×55mm	28×55
28262050001	32×55mm	35×55

TEST REPORT

High Quality

German strict quality requirements. 23 production processes. 15 type inspections. 13 keys of quality control. Product quality can be ensured to be perfect. Banninger press fittings and pipes are conformed with National Quality Inspection.

MA 180002280586

检验报告
TEST REPORT

中心编号(M): WT2019B01D00287

委托单位: 浙江德尼发中捷管业有限公司
Entrusted by: 浙江德尼发中捷管业有限公司
样品名称: 压接式涂塑钢管, 管件
Sample Name: 压接式涂塑钢管, 管件
检验类别: 委托检验
Test Type: 委托检验

国家建筑材料测试中心
National Research Center of Testing Techniques for Building Materials

WT2019B01D00287

CTC 德特检测

MA 180002280586

国家建筑材料测试中心
National Research Center of Testing Techniques for Building Materials

检验报告
(Test Report)

中心编号: WT2019B01D00287 第1页 共6页

样品名称	压接式涂塑钢管, 管件	检验类别	委托检验
委托单位	浙江德尼发中捷管业有限公司	商 标	德尼发中捷
生产单位	浙江德尼发中捷管业有限公司	样品状态	样品完好
来样日期	2019年04月16日	样品数量	管料: 1米×3根; 管件: 5个
生产日期/批号	2019年03月15日	型号规格	DN15

检验依据: 各检验项目按标准执行无偏差。

判定依据: GB/T 28897-2012 《涂塑复合管》
GB/T 27891-2011 《涂塑钢管》
CJT 433-2013 《涂塑式埋地排水用聚乙烯(PE)管》

检验项目: 管料表面质量, 管料尺寸偏差 16项, 详见第2-6页。

检验结论: *经检验, 送检样品所检项目 1-5, 9-13 均检验合格符合 GB/T 28897-2012 的技术要求; 检验项目 6-8 的检验结果符合 GB/T 27891-2011 的技术要求; 检验项目 14-15 的检验结果符合 GB/T 27891-2011 的技术要求; 检验项目 16 的检验结果符合 GB/T 27891-2011 的技术要求。检验结果见第2-6页。*

签发日期: 2019年05月16日
(检验员: 李强)

附注: (无内容)

批准: 李强 审核: 李强 编制: 李强

检验单位地址: 北京市昌平区回龙观中捷管业有限公司 电话: 65728538 邮编: 100024

CTC 德特检测

MA 180002280586

检验报告
TEST REPORT

中心编号(M): WT2018B01D00454

委托单位: 浙江德尼发中捷管业有限公司
Entrusted by: 浙江德尼发中捷管业有限公司
样品名称: 燃气用碳钢卡压式管, 管件
Sample Name: 燃气用碳钢卡压式管, 管件
检验类别: 委托检验
Test Type: 委托检验

国家建筑材料测试中心
National Research Center of Testing Techniques for Building Materials

WT2018B01D00454

CTC 德特检测

MA 180002280586

国家建筑材料测试中心
National Research Center of Testing Techniques for Building Materials

检验报告
(Test Report)

中心编号: WT2018B01D00454 第1页 共4页

样品名称	燃气用碳钢卡压式管, 管件	检验类别	委托检验
委托单位	浙江德尼发中捷管业有限公司	商 标	德尼发中捷
生产单位	浙江德尼发中捷管业有限公司	样品状态	样品完好
来样日期	2018年06月05日	样品数量	管料: 3米; 管件: 3个; 附件: 3个
生产日期/批号	2018年03月25日	型号规格	DN15

检验依据: 各检验项目按标准执行无偏差。

判定依据: GB/T 28897-2012 《涂塑复合管》
GB/T 27891-2011 《涂塑钢管》

检验项目: 表面质量, 尺寸偏差 13项, 详见第2-4页。

检验结论: *经检验, 送检样品所检项目 1-6 均检验合格符合 GB/T 28897-2012 的技术要求; 管件检验项目 7-13 均检验合格符合 GB/T 27891-2011 的技术要求。检验结果见第2-4页。*

签发日期: 2018年06月30日
(检验员: 李强)

附注: (无内容)

批准: 李强 审核: 李强 编制: 李强

检验单位地址: 北京市昌平区回龙观中捷管业有限公司 电话: 65728538 邮编: 100024

CTC 德特检测

PRESS TOOL

For many years, we have been trying to offer more to the customers world-wide. We work closely with professional partners at different stages of construction. We not only supply correct products but also provide the best system solutions. Our goal is to help customers to be much successful. As for the press piping system, only when pipes, fittings and tools are compatible and correctly operated, a safe, effective and cost-saving quick-fit could be assured. There are various press and jaws that have been tested for use when installing press fitting system. We introduce a professional international top -quality brand tools . Please note we offer press jaws in nominal sizes from 15 to 108 mm.

- Spring driven pin to fix press jaw effectively prevents misoperation.
- High-strength forged steel jaws, strong, durable and excellent performance.
- High-performance lithium battery ensures 200 crimping cycles after fully recharge.
- Long service time, 32,000 crimping cycles after maintenance.
- Only 7 seconds automated crimping process with single finger press
- LED display screen, easy to read working status.
- Automatically reset to starting position after each crimp.
- Spring driven pin to fix press jaw effectively prevents misoperation.
- 270° rotation
- Compatible with other 18V lithium batteries and power adapters.

We offer variant accessories for different press system circumstances



PIPING INSTALLATION

Thermal Expansion

Under changing weathers, especially when the temperature difference is quite big, fluid pipeline will be expanded more or less. due to the temperature material differences.

We need to take working temperature and limiting temperature of carried liquid(cold or hot) as references to decide

Below is the comparative values of the expansion rates of different materials used in liquid conveyance

Polyethylene	12
PVC	8
Zinc	2.98
Plumbum	2.83
Aluminum	2.4
Nickel-Copper	1.7
Copper	1.65
Stainless Steel	1.65
Carbon Steel	1.2
Pig Iron	0.9

Expansion of one meter long pipe under a temperature change of 100 celsius degree.(mm)

We will use this formula to calculate the linear heat

expansion: $\Delta L = \alpha \times L \times \Delta T / 1000$

ΔL =Pipe Elongation (mm)

α =Material Coefficient (mm/m.K)

L=Pipe Cross Section Length (m)

ΔT =Possible Temperature Biggest Difference

Carbon Steel Expansion Rate α 1.2×10-2mm/m.k.

In order to compare the exact expansion situations of different pipes, we recommend to use following form. Linear pipe elongation values are shown in the form. Maximum length is 20 meter. Maximum temperature difference is 100 celsius degree.

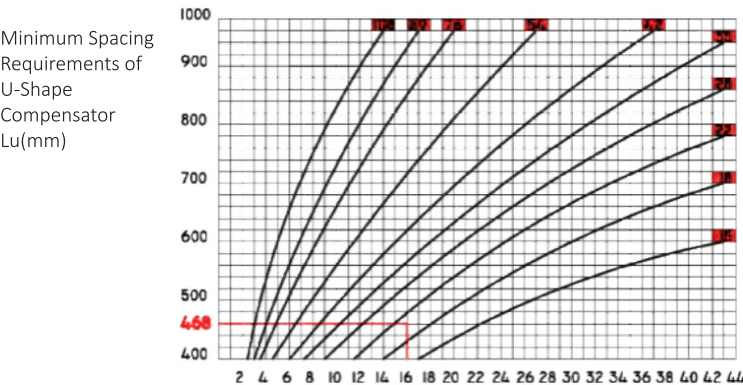
L (m)	$\Delta t (^\circ K)$									
	10	20	30	40	50	60	70	80	90	100
3	0.36	0.72	1.08	1.44	1.80	2.16	2.52	2.88	2.88	3.60
4	0.48	0.96	1.44	1.92	2.40	2.88	3.36	3.84	3.84	4.80
5	0.60	1.20	1.80	2.40	3.00	3.60	4.20	4.80	4.80	6.00
6	0.72	1.44	2.16	2.88	3.60	4.32	5.04	5.76	5.76	7.20
7	0.84	1.66	2.52	3.36	4.20	5.04	5.88	6.72	6.72	8.40
8	0.96	1.92	2.88	3.84	4.80	5.76	6.72	7.68	7.68	9.60
9	1.08	2.16	3.24	4.32	5.40	6.48	7.56	8.64	8.64	10.80
10	1.20	2.40	3.60	4.80	6.00	7.20	8.40	9.60	9.60	12.00
12	1.44	2.88	4.32	5.76	7.20	8.40	10.08	11.52	11.52	14.40
14	1.68	3.36	5.04	6.72	8.40	10.08	11.76	13.44	13.44	16.80
16	1.92	3.84	5.76	7.68	9.60	11.52	13.44	15.36	15.36	19.20
18	2.16	4.32	6.48	8.64	10.80	12.96	15.12	17.28	17.28	21.60
20	2.40	4.80	7.20	9.60	12.00	14.40	16.80	19.20	19.20	24.00

Differences between different dimensions(lengths)
L=Length of pipe coupling (m)
 Δt =Difference of temperature (°K)
Elongation (mm)

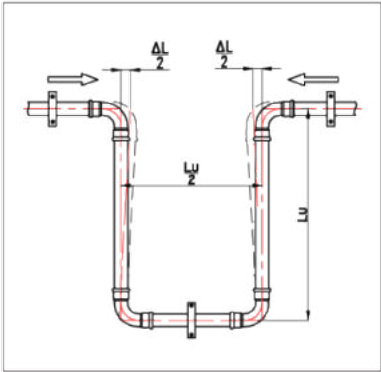
Heat Expansion Solution

When exposed in the air, expansion of the pipe will be taken away by the "elasticity" of the piepe. With the consideration of this result, the pipes should be fixed according to geometry with proper methods. Though the elasticity of the pipe will not cause too severe expansion, we still need to use expansion bends. Generally we will use U shape or Z shape expansion bends, as shown in Drawing A or Drawing B.

U-Shape Expansion Connector

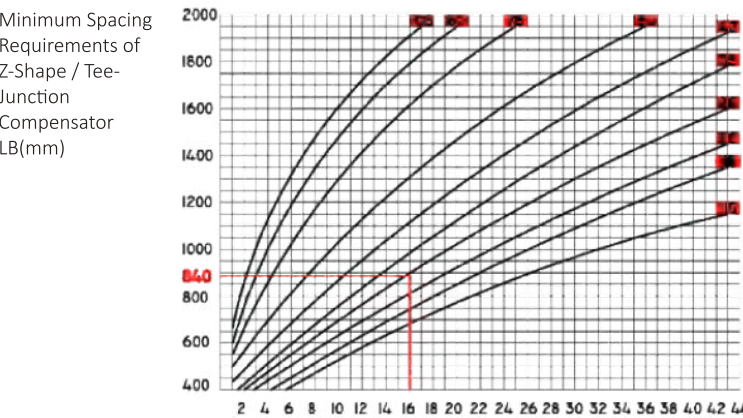


Corresponding Compensation Quantity ΔL (mm) to Different U-Shape Compensator Spacing $L_u\Delta L$ (mm)

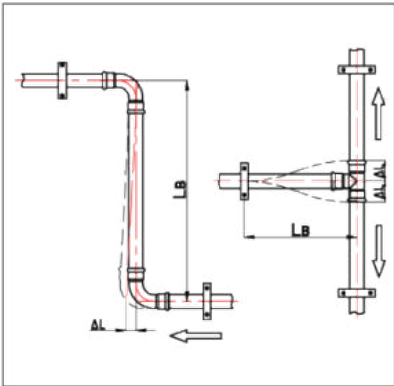


Note: 22-109 U-Shape compensator spacing L_u should be bigger than 468 mm

Z-Shape Expansion Connector



Corresponding Compensation Quantity ΔL (mm) to Different Z-Shape / Tee-Junction Compensator Spacing L_B



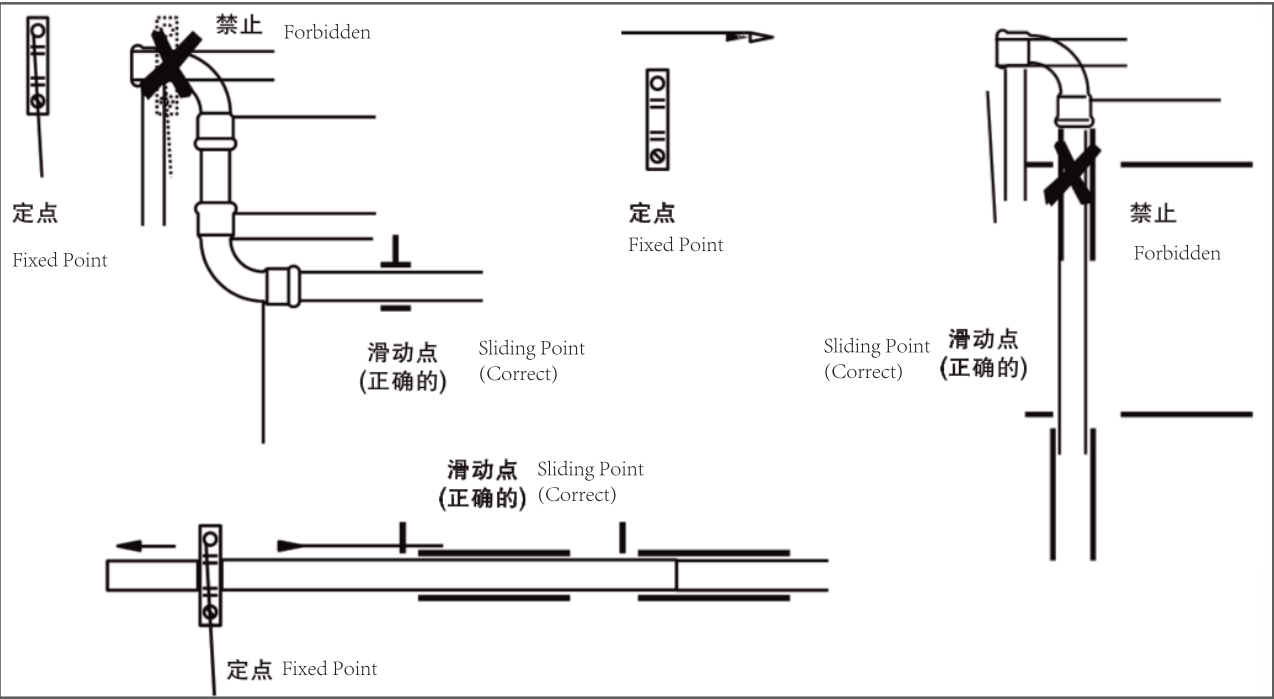
Note: 28-108 Z-Shape / Tee-Junction compensator spacing L_B should be bigger than 840 mm

Fixing of Piep

Pipe joints that support the pipe on the wall have two functions:
Fastening the pipe
Directional expanding as needed

There are two types of pipe joints or fixing devices:
"Fixed Point" Joint. Can be used to fix the pipe steadily.
"Sliding Point" Joint. Pipes can be moved in axial direction.

When the pipe is vertical, with no change of direction or expansion bend, only one fixing point is needed. If the pipeline is very long, we recommend to set the joint at the middle part. This could disperse the expansion from both sides. We especial-ly recommend to apply this operation to vertical pipelines, because vertical pipelines will cover different pressure stages. In fact, this could also reduce the mechanical stress of the shunt pipe or branch piep. Fixed point should never be installed on joint. Sliding point should be installed instead. This could avoid dangerous fixing point.



To achieve proper installation, minimum distance should be maintained, considering some factors.

Distance between Fixed Supports

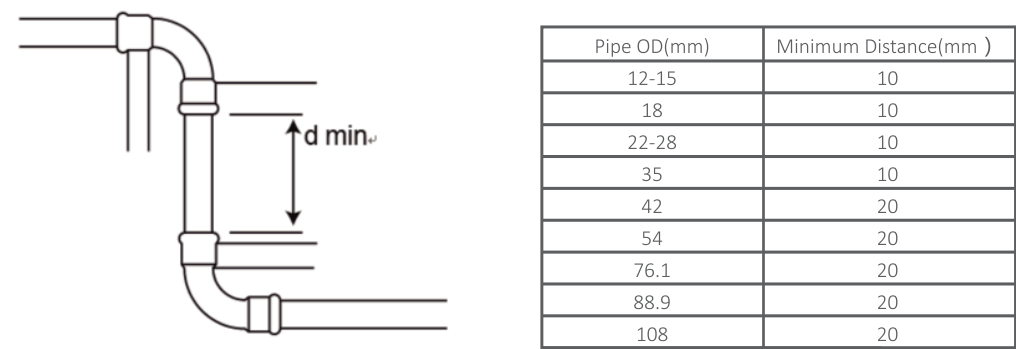
If the distance of fixed supports is too small, they will affect the absorbing of the expansion. If the distance is too big, they will intensify the vibration and the noise of the device.

We recommend to arrange the distance according to follwoing form

Pipe's θ	12	15	18	22	28	35	42	54	76.1	88.9	108
Distance (m)	1.50			2.00	2.50		3.00	3.50	4.00	4.50	5.00

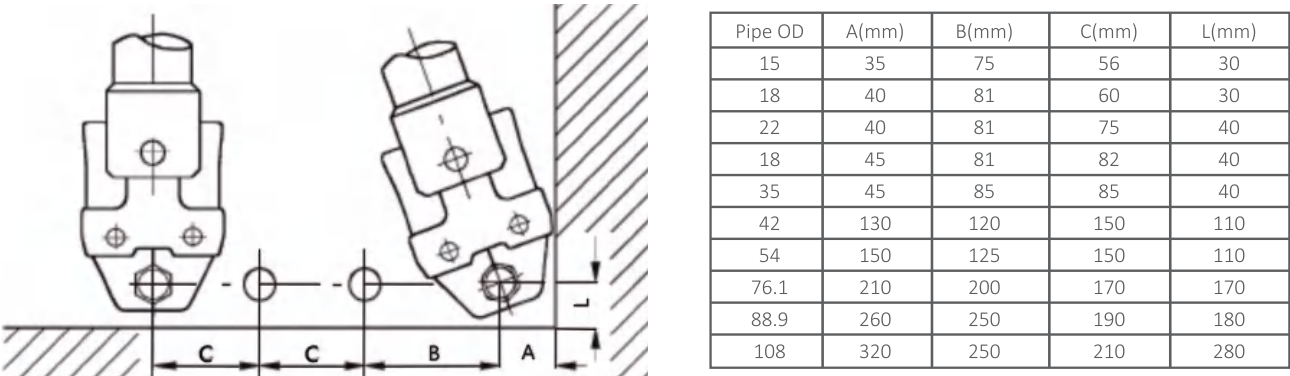
Distance Between Two Fittings

If two splices are too close, the ideal leakproofness will be affected. Following picture indicates the minimum distances.



Minimum Distance of Press Jaws

In order to avoid difficulties during the pressing operations, and also to operate the press jaws properly, we must reserv some distance. Please follow instructions as following form:



Press Jaws

Press jaws should match the diameter of the pipe fittings. For more information about the usage of the press tools, please refer to the user mannual of the tools.

Press

In order to complete the pressing properly, the die cavity of the jaws must perfectly wrap the annular convex slot. When the jaws are folded, the press process will be finished. The space on the both sides of the ring will be swelled a little bit. This is the normal situation.

Bending of the Pipe

The series recommended by Banninger contains different bends and elbows.They are suitable for pipes with different diameters. But you can cold bend pipes with inner diameter or outer diameter of 22mm, with proper bending tools. Hot bending is forbidden.

Protection of the Fittings and Pipes

- To avoid these situations:
1. Condensation on the pipe fitting.
 2. Corrosion from chemical reagent.
 3. Heat loss.

Note: Protective layer can only be covered after pressure testing on the pipeline network.

Calculation and Measurement

Liquid in the pipe and fitting network will lose some initial pressure gradually. During the flowing, the liquid will meet resistance. The resistance is from the absolute roughness of the pipe, and also from fluctuation caused by the fittings, e.g., changing of the direction, reduction of the cross section, different parts, etc.

Equipment resistance loss can be calculated according to following formula:

$\Delta P = \Delta P1 + \Delta P2$
 $\Delta P1$ =Resistance loss of the pipe
 $\Delta P2$ =Resistance loss of the fittings(and resistance loss of the network parts)

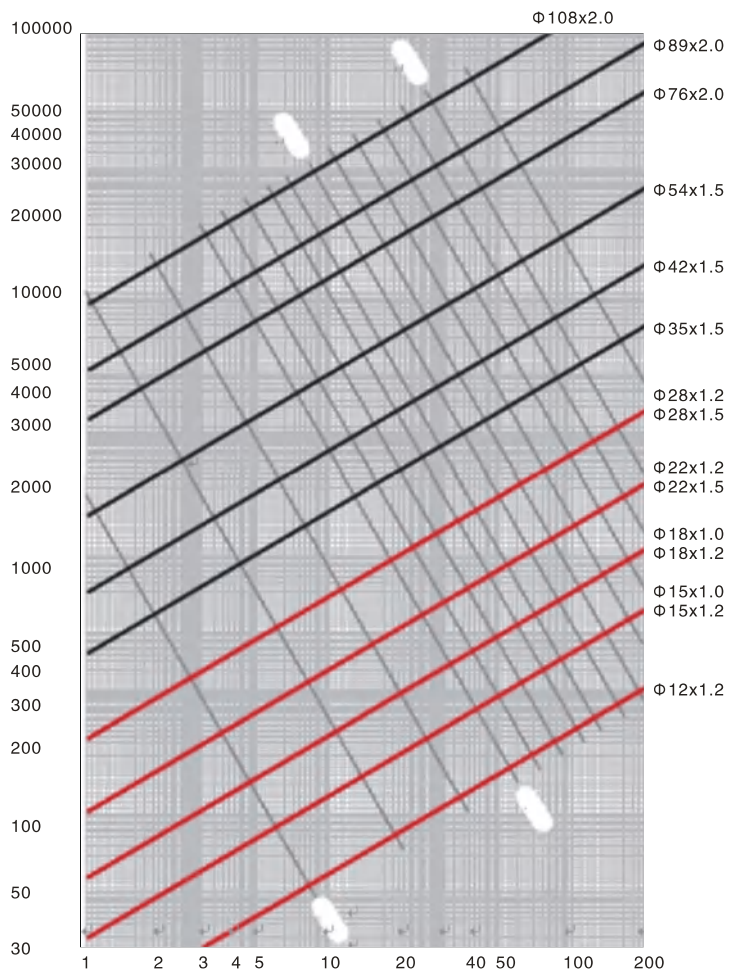
Calculation of pipe resistance loss $\Delta P1$

$\Delta P1 = \sum R \times L$
 L =Pipe length with certain diameter (m) R =Nominal resistance loss of the pipe(bar or Pa/m) (bar或Pa/m)

Unit resistance loss of the pipe is calculated by following fomula:

$R = \lambda \times \rho \times V^2 / 2 \times d$
 λ =Friction rate of the pipe
 ρ =Liquid density kg/m3
 V =Liquid speed m/s
 d =Pipe inner diameter mm

While in practice, it will be more convenient to use Banninger Fast Fitting EP Gas Line Resistance Loss Array Graphic, as following :



Possible Causes of Leakage

- 1.Pipeline of the fitting is ripped or damaged before.
- 2.Pipeline is not fully inserted to the stop position on the fitting.
- 3.During the connection, the pipeline used is not licensed or the dimensions of the pipeline are not conformed.
- 4.Fixing of the pipeline network is not conformed to the standard.
- 5.Overpowered mechanical stress affects the connections of the pipeline network.
- 6.Insufficient consideration on the thermal expansion.
- 7.Frozen equipment.
- 8.Working pressure and temperature exceed the definitive conditions.
- 9.Accidental external or human impact(damage).
- 10.The fitting is welded instead of pressed.
- 11.Pressing mismatch.
- 12.Minimum distance between two fittings is not complied.
- 13.Fittings are stored or operated improperly. External factors(light, temperature, ozone, etc.)damage the annular connectors.
- 14.Other than the annular connectors provided by Banninger, other parts are used.
- 15.Other than the annular connectors provided by Banninger, other parts are used.
- 16.Annular connector is damaged. E.g. the reason is that the pipe is not well deburred.
- 17.Annular connector is not in the annular chamber due to the mismatch of the pipe.
- 18.Forbidden lubricant is applied to the annular connector.
- 19.Liquid is not compatible with the connector material.
- 20.Worn jaws are used.
- 21.Tightening torque is insufficient.
- 22.Jaws are mismatched to the fitting when pressing.
- 23.Jaws used are not complied with the required profile type.

