

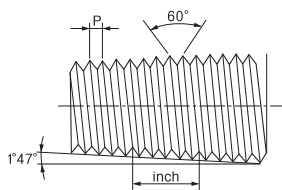
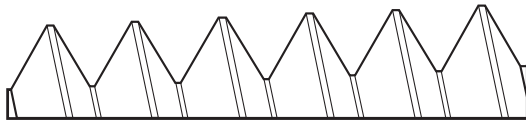
Instrumentation Pipe Fittings



Thread Information

Threads of many different kinds are used for different purposes in small piping components. The followings are the most common types of pipe threads.

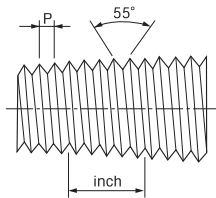
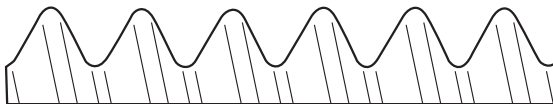
1. NPT Tapered Pipe Threads



- 60° Thread Angle
- Taper Angle 1° 47'
- Truncation of root and crest are flat.
- Pitch measured in inches.

NPT(National Pipe Tapered) is made to specifications outlined in ANSI B1. 2. This is the pipe thread used on the pipe end.

2. ISO 7/1 Tapered Pipe Threads

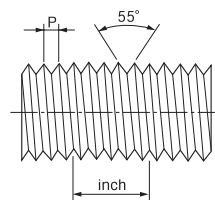
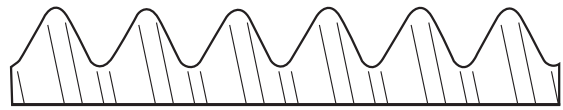


- 55° Thread Angle
- Taper Angle 1° 47'
- Truncation of root and crest are round.
- Pitch measured in millimeters.

International Organization For Standards(ISO 7/1) Tapered.(P.T) ISO tapered threds are equivalent to DIN 2999. BSP TR, JIS B0203, R 1/8 and R 1/4 Keg.

In application ISO threads are used similar to NPT threads. However, care should be used that ISO and NPT threads are not mixed. ISO threads have a 55° angle versus 60° for NPT. Thread pitch is usually measured in millimeters but may be expressed in inch. In many sizes the threads-per-inch are different and the root and crest configurations are different from NPT.

3. ISO 228/1 Parallel Pipe Threads



- 55° Thread Angle
- Diameter measured in inches.
- Truncation of root and crest are round.
- Pitch measured in inches.

International Organization For Standards(ISO 228/1) paralale(PF) ISO Parallel threads are equivalent to DIN ISO 228/1, BSP PL, JIS B0202, R 1/8 and R 1/4.

These pipe threads are similar in configuration to 7/1 threads except there is no taper. Therefore do not work by thread interference like the tapered pipe threads of ISO 7/1 or NPT. A gasket or O-Ring is normally used to seal into the parallel female threaded component.

Comparison Chart Pipe Threads

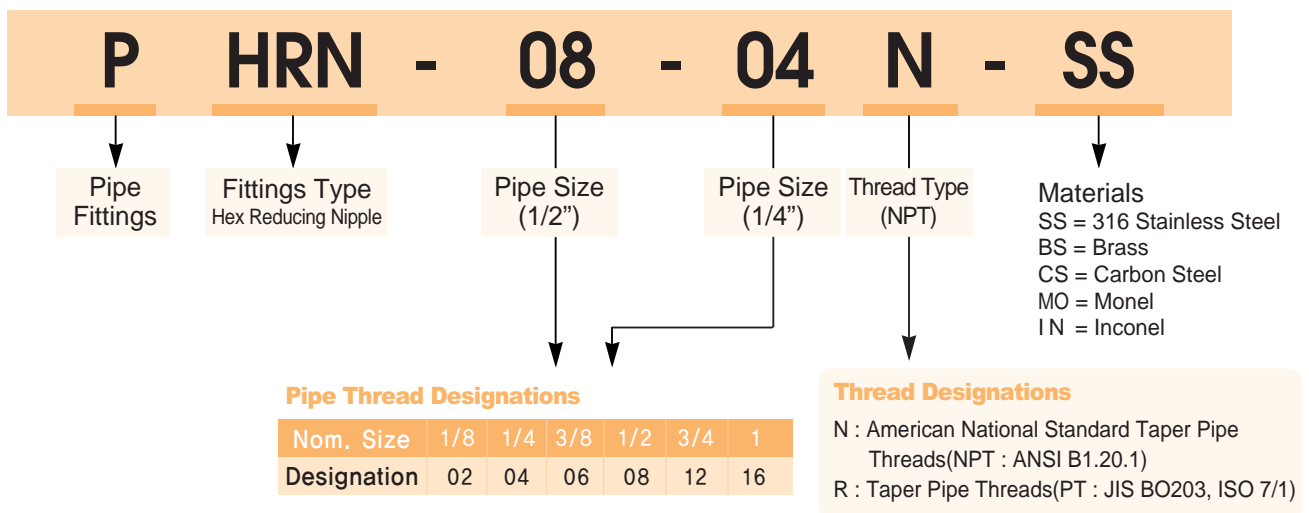
Nominal Size	Threads Per inch	Included Thread Angle	Pitch	Pipe O.D.
1/16"	NPT 27	60°	.037"	.312"
	ISO 28	55°	.036"	.312"
1/8"	NPT 27	60°	.037"	.405"
	ISO 28	55°	.036"	.398"
1/4"	NPT 18	60°	.0556"	.540"
	ISO 19	55°	.053"	.535"
3/8"	NPT 18	60°	.0556"	.675"
	ISO 19	55°	.053"	.672"
1/2"	NPT 14	60°	.0714"	.840"
	ISO 19	55°	.071"	.843"
3/4"	NPT 14	60°	.0714"	1.050"
	ISO 14	55°	.071"	1.060"
1"	NPT 11-1/2	60°	.087"	1.315"
	ISO 11	55°	.091"	1.331"
1-1/4"	NPT 11-1/2	60°	.087"	1.660"
	ISO 11	55°	.091"	1.669"
1"	NPT 11-1/2	60°	.087"	1.315"
	ISO 11	55°	.091"	1.331"
1-1/4"	NPT 11-1/2	60°	.087"	1.660"
	ISO 11	55°	.091"	1.669"

Pressure Ratings(psi)

NPT or PT(ISO 7/1) Size	316SS		Brass	
	Male	Female	Male	Female
1/8"	9400	6100	5000	3200
1/4"	7500	6200	4000	3300
3/8"	7300	5000	3900	2600
1/2"	7200	4800	3800	2400
3/4"	6800	4300	3600	2300
1"	5000	4100	2600	2200

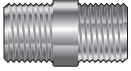
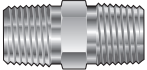

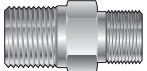



Working pressures calculated in accordance with Power Piping Code ANSI B 31.1

How to Order





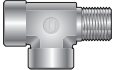
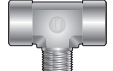


INDEX






Male Pipe to Male Pipe

PART	ITEM	Page
Close Nipple PCN		5
Hex Nipple PHN		5
Hex Long Nipple PHLN		5
Hex Reducing Nipple PHRN		6
Long Nipple PLN		6
Male Elbow PME		7
Male Tee PMT		7




Female Pipe to Male Pipe

PART	ITEM	Page
Adapter PA		7
Reducing Adapter PRA		7
Reducing Bushing PRB		8
Street Elbow PSE		8
Street Tee PST		8
Branch Tee PBT		8



Female Pipe to Female Pipe

PART	ITEM	Page
Coupling PC		9
Reducing Coupling PRC		9
Female Elbow PFE		9
Female Tee PFT		9
Union Ball Joints PBJ		9

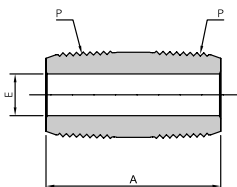
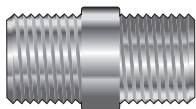
Female Pipe to Welded Systems

PART	ITEM	Page
Coupling S.W Type PCW		10
Reducing Coupling S.W Type PRCW		10
Special Coupling PSC		10

Components

PART	ITEM	Page
Pipe Cap PCP		10
Pipe Plug PPG		10

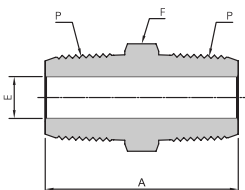
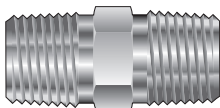
Close Nipple PCN



Connects Female Pipe To Female Pipe

Part No.	Pipe Size	Dimensions	
	PT,NPT	A	E
PCN-02	1/8	19.1	4.8
PCN-04	1/4	28.4	7.0
PCN-06	3/8	28.4	10.0
PCN-08	1/2	38.1	12.0
PCN-12	3/4	38.1	16.0
PCN-16	1	47.8	22.0

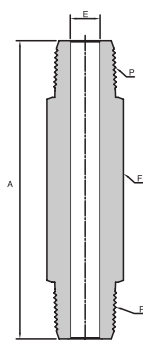
Hex Nipple PHN



Connects Female Pipe To Female Pipe

Part No.	Pipe Size	Dimensions		
	PT,NPT	A	E	F
PHN-02	1/8	25	4.8	7/16
PHN-04	1/4	35	7.0	9/16
PHN-06	3/8	36	10.0	11/16
PHN-08	1/2	47	12.0	7/8
PHN-12	3/4	47	16.0	1-1/16
PHN-16	1	59	22.0	1-3/8

Hex Long Nipple PHLN



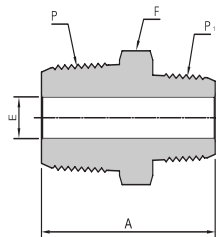
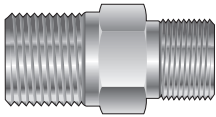
Connects Female Pipe To Female Pipe

Part No.	Pipe Size	Dimensions		
	PT,NPT	A	E	F
PHLN-02-1.5	1/8	40	4.8	7/16
PHLN-02-2.0		50		
PHLN-02-2.5		65		
PHLN-02-3.0		75		
PHLN-02-4.0		100		
PHLN-04-1.5	1/4	40	7.0	9/16
PHLN-04-2.0		50		
PHLN-04-2.5		65		
PHLN-04-3.0		75		
PHLN-04-4.0		100		
PHLN-04-6.0	150			
PHLN-06-2.0	3/8	50	10.0	11/16
PHLN-06-3.0		75		
PHLN-06-4.0		100		
PHLN-08-2.0	1/2	50	12.0	7/8
PHLN-08-3.0		75		
PHLN-08-4.0		100		
PHLN-08-6.0		150		
PHLN-12-3.0	3/4	75	16.0	1-1/16
PHLN-12-4.0		100		
PHLN-16-3.0	1	75	22.0	1-3/8
PHLN-16-4.0		100		

Note : Dimensions are reference only, subject to change without prior notice.

Hex Reducing Nipple

PHRN

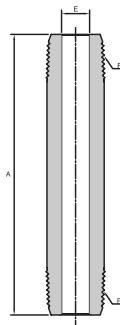


Connects Female Pipe To Female Pipe

Part No.	Pipe Size		Dimensions		
	P-PT,NPT	P1-PT,NPT	A	E	F
PHRN-04-02	1/4	1/8	31	4.8	9/16
PHRN-06-04	3/8	1/4	36	7.0	11/16
PHRN-08-04	1/2	1/4	42	7.0	7/8
PHRN-08-06	1/2	3/8	42	10.0	7/8
PHRN-12-06	3/4	3/8	44	10.0	1-1/16
PHRN-12-08	3/4	1/2	49	12.0	1-1/16
PHRN-16-08	1	1/2	54	12.0	1-3/8
PHRN-16-12	1	3/4	54	16.0	1-3/8

Long Nipple

PLN



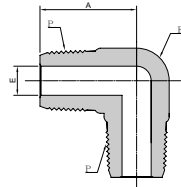
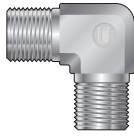
Connects Female Pipe To Female Pipe

Part No.	Pipe Size	Dimensions		
	PT,NPT	A	E	F
PLN-02-1.5	1/8	40	5.7	Ø 10.5
PLN-02-2.0		50		
PLN-02-2.5		65		
PLN-02-3.0		75		
PLN-02-4.0		100		
PLN-04-1.5	1/4	40	7.8	Ø 13.8
PLN-04-2.0		50		
PLN-04-2.5		65		
PLN-04-3.0		75		
PLN-04-4.0		100		
PLN-04-6.0	150			
PLN-06-2.0	3/8	50	10.9	Ø 17.3
PLN-06-3.0		75		
PLN-06-4.0		100		
PLN-08-2.0	1/2	50	14.3	Ø 21.7
PLN-08-3.0		75		
PLN-08-4.0		100		
PLN-08-6.0		150		
PLN-12-3.0	3/4	75	19.4	Ø 27.2
PLN-12-4.0		100		
PLN-16-3.0	1	75	25.0	Ø 34.0
PLN-16-4.0		100		

Note : Dimensions are reference only, subject to change without prior notice.

Male Elbow

PME

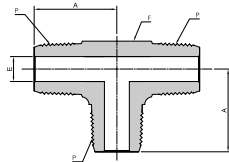
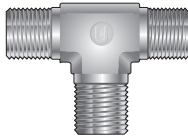


Connects Female Pipe To Female Pipe

Part No.	Pipe Size		Dimensions		
	PT,NPT		A	E	F
PME-02	1/8		19.5	4.8	7/16
PME-04	1/4		23.4	7.0	1/2
PME-06	3/8		28.0	10.0	13/16
PME-08	1/2		36.8	12.0	13/16

Male Tee

PMT

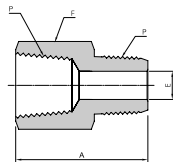
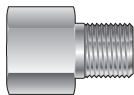


Connects Female Pipe To Female Pipe

Part No.	Pipe Size		Dimensions			
	PT,NPT		A	E	L	F
PMT-02	1/8		39.0	4.8	19.5	7/16
PMT-04	1/4		23.3	7.0	21.5	9/16
PMT-06	3/8		56.0	10.0	28.0	11/16
PMT-08	1/2		73.6	12.0	36.8	13/16

Adapter

PA

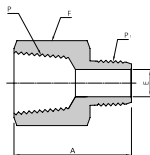
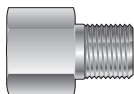


Connects Male Pipe To Female Pipe

Part No.	Pipe Size		Dimensions		
	PT,NPT		A	E	F
PA-02	1/8		28	4.8	9/16
PA-04	1/4		33	7.0	3/4
PA-06	3/8		36	10.0	7/8
PA-08	1/2		45	12.0	1-1/16
PA-12	3/4		50	16.0	1-1/4
PA-16	1		58	22.0	1-5/8

Reducing Adapter

PRA



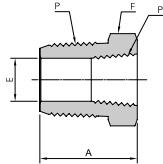
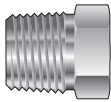
Connects Male Pipe To Female Pipe

Part No.	Pipe Size		Dimensions		
	P-PT,NPT	P1-PT,NPT	A	E	F
PRA-04-02	1/4	1/8	30	4.8	3/4
PRA-06-04	3/8	1/4	35	7.0	7/8
PRA-08-04	1/2	1/4	39	7.0	1-1/16
PRA-08-06	1/2	3/8	41	10.0	1-1/16
PRA-12-06	3/4	3/8	44	10.0	1-1/4
PRA-12-08	3/4	1/2	48	12.0	1-1/4
PRA-16-08	1	1/2	52	12.0	1-5/8
PRA-16-12	1	3/4	55	16.0	1-5/8

Note : Dimensions are reference only, subject to change without prior notice.

Reducing Bushing

PRB

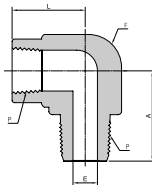
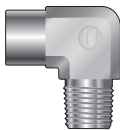


Connects Female Pipe To Male Pipe

Part No.	Pipe Size		Dimensions		
	P-PT,NPT	P1-PT,NPT	A	E	F
PRB-04-02	1/4	1/8	22	8.0	9/16
PRB-06-04	3/8	1/4	23	11.0	11/16
PRB-08-04	1/2	1/4	28	11.0	7/8
PRB-08-06	1/2	3/8	28	15.0	7/8
PRB-12-04	3/4	1/4	31	11.0	1-1/16
PRB-12-06	3/4	3/8	31	15.0	1-1/16
PRB-12-08	3/4	1/2	31	18.0	1-1/16
PRB-16-08	1	1/2	35	18.0	1-3/8
PRB-16-12	1	3/4	35	22.0	1-3/8

Street Elbow

PSE

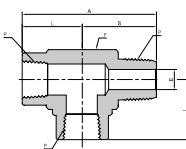
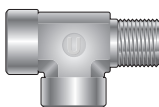


Connects Male Pipe To Female Pipe

Part No.	Pipe Size	Dimensions			
	P-PT,NPT	A	L	E	F
PSE-02	1/8	26.4	26.4	4.8	1/2
PSE-04	1/4	29.7	29.7	7.0	11/16
PSE-06	3/8	32.0	36.1	10.0	13/16
PSE-08	1/2	39.6	39.6	12.0	1

Street Tee

PST

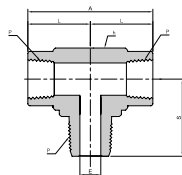
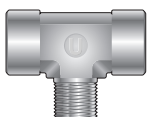


Connects Male Pipe To Female Pipe

Part No.	Pipe Size	Dimensions				
	PT,NPT	A	L	S	E	F
PST-02	1/8	48.5	26.4	22.1	4.8	1/2
PST-04	1/4	59.4	29.7	29.7	7.0	11/16
PST-06	3/8	68.1	36.1	32.0	10.0	13/16
PST-08	1/2	79.2	39.6	39.6	12.0	1

Branch Tee

PBT



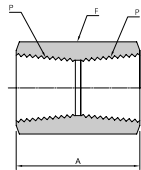
Connects Male Pipe To Female Pipe

Part No.	Pipe Size	Dimensions				
	PT,NPT	A	L	S	E	F
PBT-02	1/8	52.8	26.4	22.1	4.8	1/2
PBT-04	1/4	59.4	29.7	29.7	7.0	11/16
PBT-06	3/8	72.1	36.1	32.0	10.0	13/16
PBT-08	1/2	79.2	39.6	39.6	12.0	1

Note : Dimensions are reference only, subject to change without prior notice.

Coupling

PC

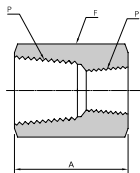
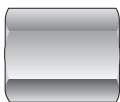


Connects Male Pipe To Male Pipe

Part No.	Pipe Size	Dimensions		
	PT,NPT	A	E	F
PC-02	1/8	21	8.0	9/16
PC-04	1/4	30	11.0	3/4
PC-06	3/8	30	15.0	7/8
PC-08	1/2	40	18.0	1-1/16
PC-12	3/4	42	22.0	1-1/4
PC-16	1	51	25.0	1-5/8

Reducing Coupling

PRC

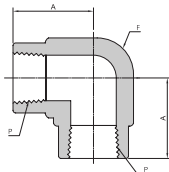
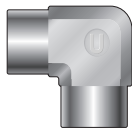


Connects Male Pipe To Male Pipe

Part No.	Pipe Size		Dimensions		
	P-PT,NPT	P1-PT,NPT	A	E	F
PRC-04-02	1/4	1/8	30	8.0	3/4
PRC-06-04	3/8	1/4	30	11.0	7/8
PRC-08-04	1/2	1/4	40	11.0	1-1/16
PRC-08-06	1/2	3/8	40	15.0	1-1/16
PRC-12-06	3/4	3/8	42	15.0	1-1/4
PRC-12-08	3/4	1/2	42	18.0	1-1/4
PRC-16-08	1	1/2	51	18.0	1-5/8
PRC-16-12	1	3/4	51	22.0	1-5/8

Female Elbow

PFE

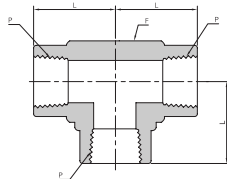
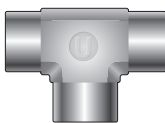


Connects Male Pipe To Male Pipe

Part No.	Pipe Size	Dimensions		
	PT,NPT	A	E	F
PFE-02	1/8	26.4	8.6	1/2
PFE-04	1/4	29.7	11.4	11/16
PFE-06	3/8	36.0	14.9	13/16
PFE-08	1/2	39.6	18.5	1

Female Tee

PFT

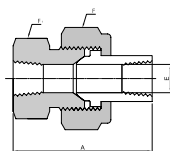
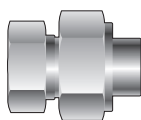


Connects Male Pipe To Male Pipe

Part No.	Pipe Size	Dimensions			
	P-PT,NPT	A	L	E	F
PFE-02	1/8	52.8	26.4	8.6	1/2
PFE-04	1/4	59.4	29.7	11.4	11/16
PFE-06	3/8	72.1	36.1	15.0	13/16
PFE-08	1/2	79.2	39.6	18.5	1

Union Ball Joints

PBJ



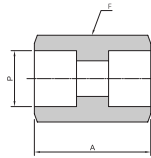
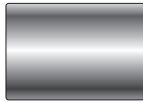
Connects Male Pipe To Male Pipe

Part No.	Pipe Size	Dimensions			
	P-PT,NPT	A	E	F	F ₁
PBJ-02	1/8	46.0	6.8	1-1/8	15/16
PBJ-04	1/4	59.4	9.1	1-3/8	1-3/16
PBJ-06	3/8	63.5	13.2	1-1/2	1-5/16
PBJ-08	1/2	68.3	15.7	1-3/4	1-5/8
PBJ-12	3/4	79.2	22.4	2-1/8	1-7/8
PBJ-16	1	90.4	26.2	2-1/2	2-3/8

Note : Dimensions are reference only, subject to change without prior notice.

Coupling S.W Type

PCW

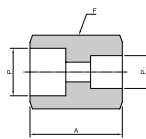


Connects Both Welded Systems

Part No.	Pipe Size		Dimensions		
	Nom Size	P-SW	A	E	F
PCW-08	1/2	22.2	29.5	14.0	Ø 32
PCW-12	3/4	27.7	35.5	19.0	Ø 38
PCW-16	1	34.5	38.7	25.0	Ø 46

Reducing Coupling S.W Type

PRCW

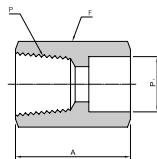


Connects Both Welded Systems

Part No.	Pipe Size			Dimensions		
	Nom Size	P-SW	P1-SW	A	E	F
PRCW-12-08	3/4 x 1/2	27.7	22.2	32.5	14.0	Ø 38
PRCW-16-08	1 x 1/2	34.5	22.2	35.7	14.0	Ø 46
PRCW-16-12	1 x 3/4	34.5	27.7	38.7	19.0	Ø 46

Special Coupling

PSC

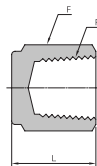


Connects Male Pipe to Welded Systems

Part No.	Pipe Size			Dimensions		
	Nom Size	P-PT,NPT	P1-SW	A	E	F
PSC-08-08W	1/2	1/2	22.2	40	14.0	Ø 38
PSC-12-12W	3/4	3/4	27.7	43	19.0	Ø 46
PSC-16-16W	1	1	34.5	50	25.0	Ø 46

Pipe Cap

PCP

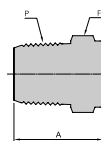
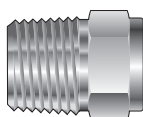


Connects Male Pipe

Part No.	Pipe Size	Dimensions	
	PT,NPT	A	F
PCP-02	1/8	19	9/16
PCP-04	1/4	23	3/4
PCP-06	3/8	23	7/8
PCP-08	1/2	34	1-1/16
PCP-12	3/4	34	1-1/4
PCP-16	1	41	1-5/8

Pipe Plug

PPG



Connects Female Pipe

Part No.	Pipe Size	Dimensions	
	PT,NPT	A	F
PPG-02	1/8	19	7/16
PPG-04	1/4	24	9/16
PPG-06	3/8	25	11/16
PPG-08	1/2	31	7/8
PPG-12	3/4	31	1-1/16
PPG-16	1	38	1-3/8

Note : Dimensions are reference only, subject to change without prior notice.

LINE UP

Tube Fittings



Uni-primet Weld & Face Seal Fittings



PTFE Fittings



Diaphragm / Bellows Valve



Needle Valves



Ball Valves



Hex Ball Valves



Check Valves



Manifold Valves



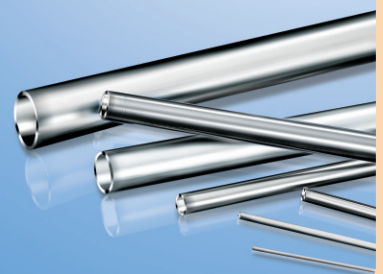
Filters



TUBE/PIPE Clean BEND Fittings



Tubes AP/BA/EP





유니온금속공업(주)
UNION METAL INDUSTRIAL CO.,LTD.

본사 및 공장

인천광역시 남동구 고잔동 725-13번지
남동공단 152블럭 12롯트
TEL:(032)822-6600(대) FAX:(032)821-6604
<http://www.unilok.com>
E-mail : unilok@unilok.com

서울직매장

서울특별시 구로구 구로동 604-1
구로기계공구상가 D-31-110호
TEL:(02)2676-6673(대) FAX:(02)2679-6673

Head Office and Factory

152 Block-12Lot, Namdong Industrial Complex,
725-13, Gojan-Dong, Namdong-Gu, Incheon,
KOREA.
TEL:+82-32-822-6600 FAX:+82-32-821-6604
<http://www.unilok.com>
E-mail:unilok@unilok.com

Seoul Office

D-31-110, Guro Tools Center,
604-1, Guro-Dong, Guro-Gu, Seoul, KOREA.
TEL:+82-2-2676-6673 FAX:+82-2-2679-6673