FINE series PURE®

UPG® Fittings

Thanks to Our Customers

2004 1st Monodzukuri
Grand Award for Parts

Parts Award

UPG®

Fujikin®

A Product Lineup from Fujikin that Aims to Deliver the Ultimate in Reliability.

UPG® high-performance, ultra-compact gasket fittings are tube fittings delivering outstanding performance and quality that are mass-produced using design know-how and production technology acquired from Fujikin's many years of experience as a precision fitting manufacturer.

The widely popular UJR gasket fittings have been improved to minimize dead space, making them 70% smaller than before, which, along with significantly improved sealing performance, ensures they are the ultimate in highly reliable, ultra-compact fittings.

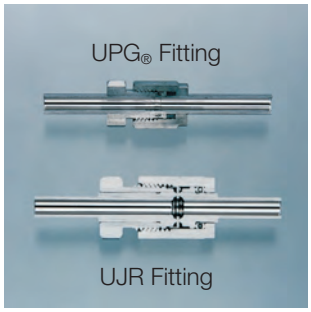
UPG® ultra-compact gasket fittings are similar to conventional UJR fittings, with a basic construction comprised of a stainless steel body, sleeve, union nut, and gasket.

Ministry-certified high-pressure products

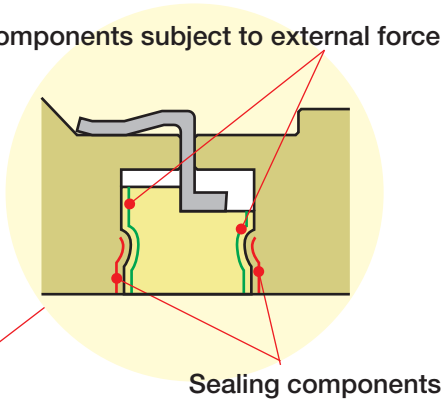
Fittings Quick Reference

Features

Size Reduction
(approx. 70% smaller than UJR)

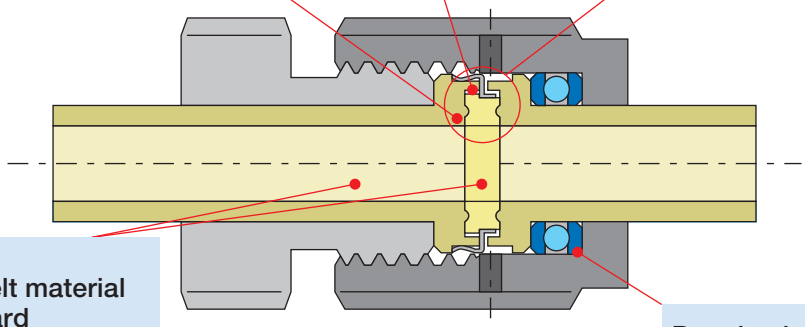


Isolation of Sealing Components from Components that Receive External Force



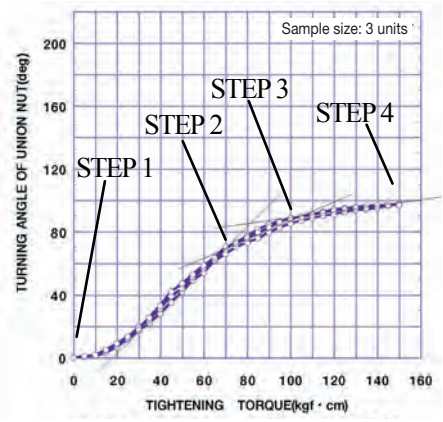
Overtightening-prevention mechanism to prevent damage to the end of the sealing components

Dead space-free



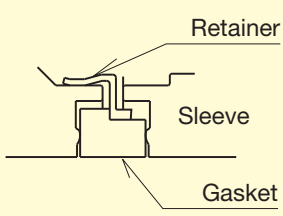
Wetted surfaces
SUS316L double-melt material
UP treatment standard

Purering incorporated into nut
Prevents corotation and is particle-free



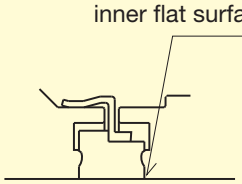
Tightening Torque VS. Nut Rotation Angle

STEP1



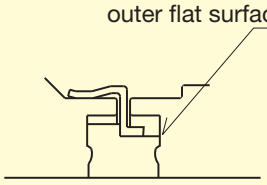
STEP2

Tight contact with inner flat surfaces



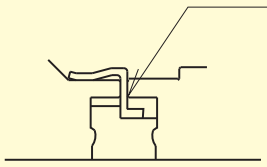
STEP3

Tight contact with outer flat surfaces



STEP4

Tight contact with all surfaces



Full contact ensures stable tightening torque, thus achieving a torque-controlled construction.

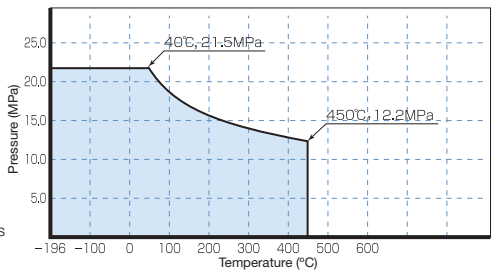
Specifications and Materials

Specifications	Design Pressure	Ultra-high Vacuum to 21.5 MPa
	Operating Temperature Range	−196 °C to +450 °C
Material	Body and Sleeve*	SUS316L (double-melt material)
	Gasket*	SUS316L (double-melt material)
	Nut	SUS316
	Bearing	Stainless Steel

*: Wetted and gas contact components

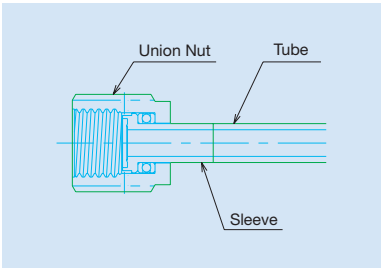
Usable fluids: Inert gases, such as air, nitrogen and helium, as well as gases and liquids that do not corrode wetted parts

Temperature-Pressure Rating

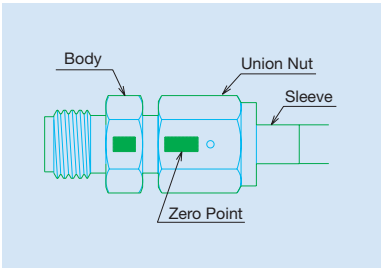


Assembly

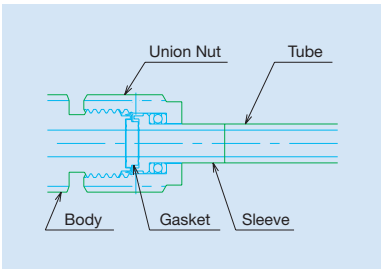
◆ Tightening Procedure 1 - Rotation Angle Method -



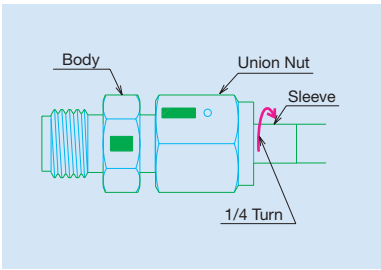
(1)
With the union nut attached to the sleeve, weld the tube to the sleeve.



(3)
Mark the body and union nut with a felt-tipped pen or similar.
This position is the zero point.



(2)
Attach the body or sleeve and finger-tighten until the body, gasket, and sleeve end faces are in tight contact.



(4)
Keep the body side stationary, and tighten the union nut 1/4 turn.
Tightening is complete.

IMPORTANT

If the piping is under stress and you cannot tightly press the end faces together with your fingers, use a wrench or similar tool to slowly turn the union nut until you notice a sudden increase in the torque. Once you have confirmed that position, tighten it a quarter turn from that point.

◆ Tightening Procedure 2 - Torque Method -

(1) With the union nut attached to the sleeve, weld the tube to the sleeve.

(2) Attach the gasket with retainer to either the body or the sleeve end, and then finger-tighten the nut until the body, gasket, and sleeve end faces are in tight contact.

(3) Keep the body side stationary, and tighten the union nut with a torque wrench. Tightening is complete.

Specified Tightening Torque by Size

Fitting Size	Specified Tightening Torque (N·m)
3.2	10
6.35	10.8
9.52	16.7
12.7	46.1

IMPORTANT

If the piping is under stress and you cannot tightly press the end faces together with your fingers, assembly via the torque method is not possible.

Product Numbers

The following are the specified UPG® product numbers; please use these product numbers when ordering or making inquiries.

Product Number Designations for Sleeves, Union Nuts and Gaskets

UPG - 6.35 MS - L20 - 316LM - FD

Nominal Diameter	Part Name	Sleeve Length	Material	Inner Surface Treatment

◆ Part Name

MS	Male Sleeve	G	Gasket
N	Union Nut		

◆ Material

316LM SUS316L double-melt, ultra-low Mn material
FS9 Ferritic special stainless steel*
HC22 Hastelloy C-22 material*

*: Option only for sleeves. Please inquire separately.

Product Number Designations for Bodies

UPG - F - 6.35

Fitting Type	Nominal Diameter

◆ Fitting Type

F	Straight Union Body	T	Tee Union Body
	UJR-type Straight Union Body	JP	Plug Union
P	Panel Union Body	C	Coupling Body
FP	UJR-type Panel Union Body	JC	Cap Body
L	Elbow Union Body		

◆ Nominal Diameter

3.2: Indicates 1/8" OD
6.35: Indicates 1/4" OD
9.52: Indicates 3/8" OD
12.7: Indicates 1/2" OD

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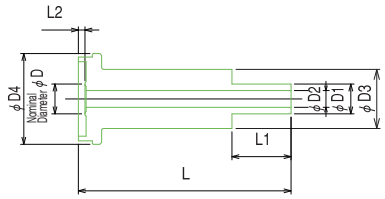
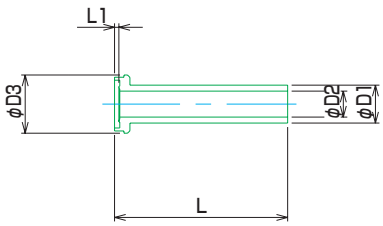
(Unit: mm)

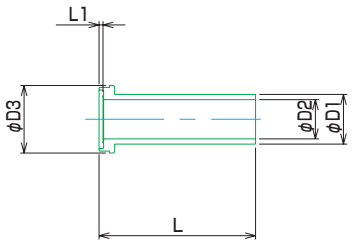
Sleeve



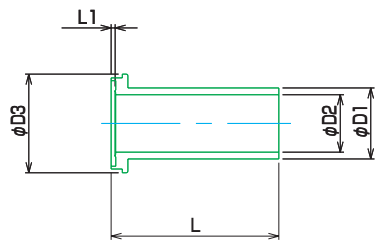
Nominal Diameter	D1	D2	D3	D4	L	L1	L2	Product Number
3.2	3.2	1.8	6.35	9.75	22.85	6.35	0.7	UPG-3.2MS-L22-316LM



Nominal Diameter	D1	D2	D3	L	L1	Product Number
6.35	6.35	4.35	9.75	20	0.7	UPG-6.35MS-L20-316LM
6.35	6.35	4.35	9.75	23	0.7	UPG-6.35MS-L23-316LM
6.35	6.35	4.35	9.75	29	0.7	UPG-6.35MS-L29-316LM
6.35	6.35	4.35	9.75	36	0.7	UPG-6.35MS-L36-316LM

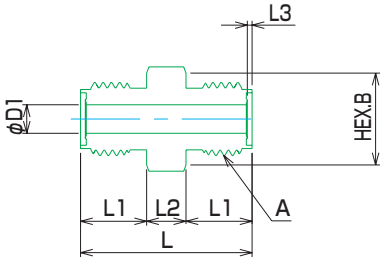


Nominal Diameter	D1	D2	D3	L	L1	Product Number
9.52	9.52	7.52	12.95	21	0.7	UPG-9.52MS-L21-316LM
9.52	9.52	7.52	12.95	25	0.7	UPG-9.52MS-L25-316LM
9.52	9.52	7.52	12.95	30	0.7	UPG-9.52MS-L30-316LM
9.52	9.52	7.52	12.95	38	0.7	UPG-9.52MS-L38-316LM



Nominal Diameter	D1	D2	D3	L	L1	Product Number
12.7	12.7	10.22	17.65	24	0.7	UPG-12.7MS-L24-316LM
12.7	12.7	10.22	17.65	28	0.7	UPG-12.7MS-L28-316LM
12.7	12.7	10.22	17.65	30.5	0.7	UPG-12.7MS-L30-316LM
12.7	12.7	10.22	17.65	41.5	0.7	UPG-12.7MS-L41-316LM

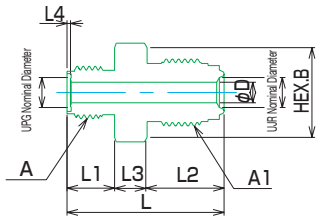
Straight Union Body



Nominal Diameter	D1	A	B	L	L1	L2	L3	Product Number
3.2	1.8	7/16-20UNF	14	26	10	6	0.7	UPG-F-3.2
6.35	4.35	7/16-20UNF	14	26	10	6	0.7	UPG-F-6.35
9.52	7.52	9/16-20UN	17	29	11	7	0.7	UPG-F-9.52
12.7	10.22	3/4-20UNEF	22	33.6	12.8	8	0.7	UPG-F-12.7

(Unit: mm)

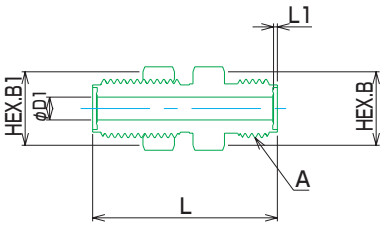
UJR-type Straight Union Body



UPG Nominal Diameter	UJR Nominal Diameter	A	A1	D	B	L	L1	L2	L3	L4	Product Number
*3.2	6.35	7/16-20UNF	9/16-18UNF	1.8	17	32.7	10	16.3	6.4	0.7	UPG-F-3.2×6.35JR
6.35	6.35	7/16-20UNF	9/16-18UNF	4.35	17	32.7	10	16.3	6.4	0.7	UPG-F-6.35×6.35JR

*: Made to order.

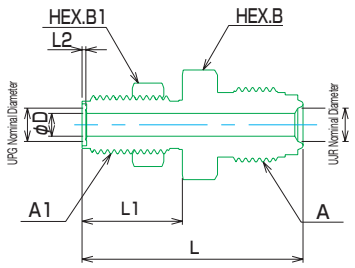
Panel Union Body



Nominal Diameter	D1	A	Panel Hole Diameter	B	B1	L	L1	Product Number
*3.2	1.8	7/16-20UNF	11.2	14	14	37	0.7	UPG-P-3.2
6.35	4.35	7/16-20UNF	11.2	14	14	37	0.7	UPG-P-6.35
9.52	7.52	9/16-20UN	14.3	17	19	41.5	0.7	UPG-P-9.52
12.7	10.22	3/4-20UNEF	19.1	22	23	48.5	0.7	UPG-P-12.7

*: Made to order.

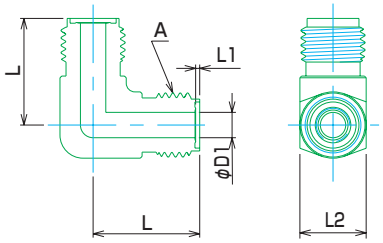
UJR-type Panel Union Body



UJR Nominal Diameter	UPG Nominal Diameter	A	A1	Panel Hole Diameter	D	B	B1	L	L1	L2	Product Number
*3.2	6.35	9/16-18UNF	7/16-20UNF	11.5	1.8	19	14	44	21	0.7	UPG-FP-3.2×6.35JR
6.35	6.35	9/16-18UNF	7/16-20UNF	11.5	4.35	19	14	44	21	0.7	UPG-FP-6.35×6.35JR

*: Made to order.

Elbow Union Body

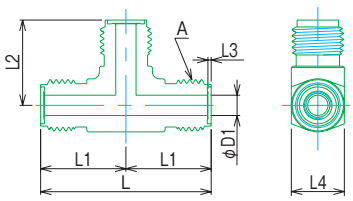


Nominal Diameter	D1	A	L	L1	L2	Product Number
3.2	1.8	7/16-20UNF	18.5	0.7	11.5	UPG-L-3.2
6.35	4.35	7/16-20UNF	18.5	0.7	11.5	UPG-L-6.35
*9.52	7.52	9/16-20UN	22	0.7	17.2	UPG-L-9.52
*12.7	10.22	3/4-20UNEF	25	0.7	21	UPG-L-12.7

*: Made to order.

(Unit: mm)

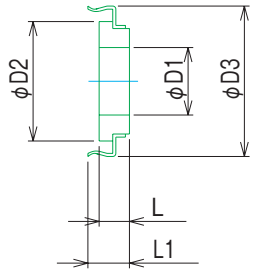
Tee Union Body



Nominal Diameter	D1	A	L	L1	L2	L3	L4	Product Number
3.2	1.8	7/16-20UNF	37	18.5	18.5	0.7	11.5	UPG-T-3.2
6.35	4.35	7/16-20UNF	37	18.5	18.5	0.7	11.5	UPG-T-6.35
*9.52	7.52	9/16-20UN	44	22	22	0.7	17.2	UPG-T-9.52
*12.7	10.22	3/4-20UNEF	50	25	25	0.7	21	UPG-T-12.7

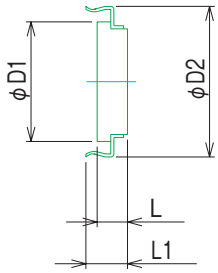
*: Made to order.

Gasket



Nominal Diameter	D1	D2	D3	L	L1	Product Number
3.2	1.8	7.5	9.8	1.96	2.48	UPG-3.2G
6.35	4.4	7.5	9.8	1.96	2.48	UPG-6.35G
9.52	7.5	10.9	12.95	1.96	2.88	UPG-9.52G
12.7	10.2	14.9	17.65	1.96	2.88	UPG-12.7G

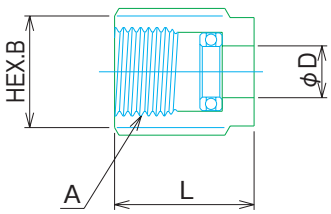
Blind Gasket



Nominal Diameter	D1	D2	L	L1	Product Number
6.35	7.5	9.8	1.96	2.48	UPG-6.35G-BL
9.52	10.9	12.95	1.96	2.88	UPG-9.52G-BL
12.7	14.9	17.65	1.96	2.88	UPG-12.7G-BL

Note: For nominal diameter 3.2, it is possible to also use nominal diameter 6.35.

Nut

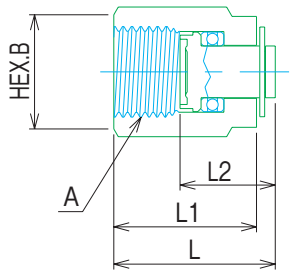


Nominal Diameter	D	A	B	L	Product Number
6.35	6.5	7/16-20UNF	14	17.5	UPG-6.35N
9.52	9.7	9/16-20UN	17	18.5	UPG-9.52N
12.7	12.9	3/4-20UNEF	22	21	UPG-12.7N

Note: For nominal diameter 3.2, it is possible to also use nominal diameter 6.35.

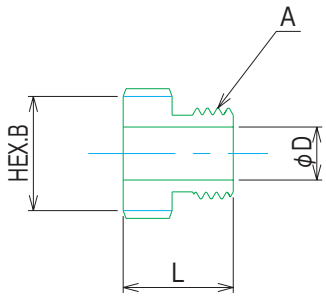
(Unit: mm)

Plug Union



Nominal Diameter	A	B	L	L1	L2	Product Number
3.2	7/16-20UNF	14	20.1	17.5	12.1	UPG-JP-3.2
6.35	7/16-20UNF	14	20.1	17.5	12.1	UPG-JP-6.35
9.52	9/16-20UN	17	21.9	18.5	13.4	UPG-JP-9.52
12.7	3/4-20UNEF	22	24.7	21	14.2	UPG-JP-12.7

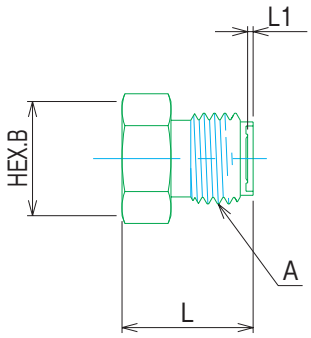
Coupling Body



Nominal Diameter	D	A	B	L	Product Number
6.35	6.5	7/16-20UNF	14	13.5	UPG-C-6.35
9.52	9.67	9/16-20UN	17	15	UPG-C-9.52
12.7	12.85	3/4-20UNEF	22	18.8	UPG-C-12.7

Note: For nominal diameter 3.2, it is possible to also use nominal diameter 6.35.

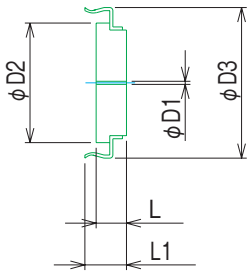
Cap Union Body



Nominal Diameter	A	B	L	L1	Product Number
3.2	7/16-20UNF	14	16	0.7	UPG-JC-3.2
6.35	7/16-20UNF	14	16	0.7	UPG-JC-6.35
9.52	9/16-20UN	17	18	0.7	UPG-JC-9.52
12.7	3/4-20UNEF	22	20.8	0.7	UPG-JC-12.7

Option

Orifice Gasket



Nominal Diameter	D1	D2	D3	L	L1	Product Number
6.35	0.3	7.5	9.8	1.96	2.48	UPG-6.35G-*

*: We have experience with a variety of orifice sizes, including 0.3, 0.4, 0.5, 1.0, and 2.0.
Note: For nominal diameter 3.2, it is possible to also use nominal diameter 6.35.

◆ Please feel free to contact us regarding other fitting types.

memo

memo

CAT: No.UPG1E_04