

**EAT•N**

**Aerospace**

**Fluid Conveyance**

Aeroquip Brand  
Low Profile  
Ratchet Lock Couplings  
1800 and 1801 Series

- **Lightweight**
- **Self Sealing**
- **Compact Design**
- **Minimum Pressure Loss**



# Aeroquip Brand Low Profile Ratchet Lock Couplings, Coupling Caps and Plugs

## 1800 and 1801 Series



### Lightweight, Self Sealing, Compact Design and Minimum Pressure Loss

These new Aeroquip brand low profile self sealing ratchet lock couplings offer dependable service in aircraft and missile hydraulic systems for both low and high pressure applications. Available in two basic materials, aluminum or stainless steel, all sizes of the coupling have been qualified to the performance requirements of MIL-C-25427A or AS1709.

Significant advantages are incorporated in this coupling when compared with previous self-sealing couplings. They are:

- Small size-up to 45% smaller, depending on size.
- Light weight-up to 46% less, depending on size and material.
- Ratchet Lock positive engagement assures dependable connection.
- Stainless Steel-provides high strength and fire resistance for reliable 3000 psig service. Also available in 4000 psig and 5000 psig pressure class as well as titanium material for weight savings.
- Aluminum-provides excellent weight savings for reliable 1000 psig service.

- Improved valving-minimizes pressure loss.

### Operating Advantages

Connection/Disconnection . . . Easily connects by rotating the union mechanism and engaging the ratchet teeth. Disconnects with a simple "pull and rotate" motion. Practically no fluid loss . . . or air inclusion during connection and disconnection.

Air and Moisture Excluded . . . No valve cavity to trap air or moisture.

Reliable Design . . . No delicate mechanisms to malfunction.

### 1800 Series Coupling Pressure Caps and Plugs

#### Cap

Part Number AE81722 (Letter Code)

Part Number AE81617 (Letter Code) For Skydrol

#### Plug

Part Number AE99133 (Letter Code)

Part Number AE81618 (Letter Code) For Skydrol

#### Material

Aluminum and Stainless Steel

### 1801 Series Coupling Pressure Caps and Plugs

#### Cap

Part Number AE81092 (Letter Code)

Part Number AE81724 (Letter Code) For Skydrol

#### Plug

Part Number AE81093 (Letter Code)

Part Number 81723 (Letter Code) For Skydrol

#### Material

Aluminum and Stainless Steel

### 1800 Series Coupling Dust Caps and Plugs

#### Cap

Part Number AE99373 (Letter Code)

Part Number AE80659 (Letter Code) For Skydrol

#### Plug

Part Number AE99374 (Letter Code)

Part Number AE80660 (Letter Code) For Skydrol

#### Material

Nitrile: MIL-H-5606, MIL-H-83282, EPR; Skydrol

### 1801 Series Coupling Dust Caps and Plugs

#### Cap

Part Number AE99373 (Letter Code)

Part Number AE80659 (Letter Code) For Skydrol

#### Plug

Part Number AE99374 (Letter Code)

Part Number AE80660 (Letter Code) For Skydrol

#### Material

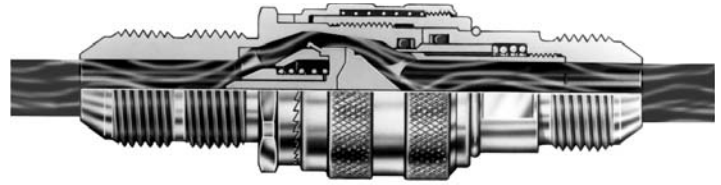
Nitrile: MIL-H-5606, MIL-H-83282, EPR; Skydrol

# Pressure / Flow Chart and Coupling Design Data

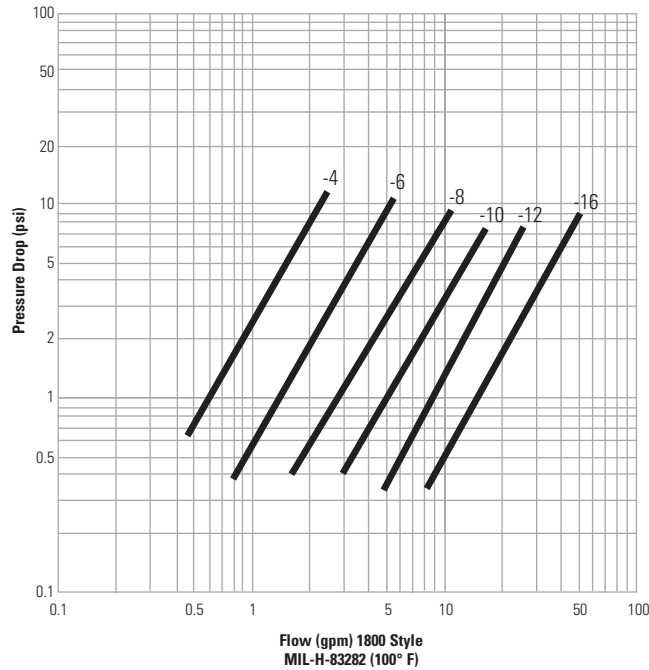
## Pressure Flow Chart

To find the pressure loss for a given coupling size at a given flow rate:

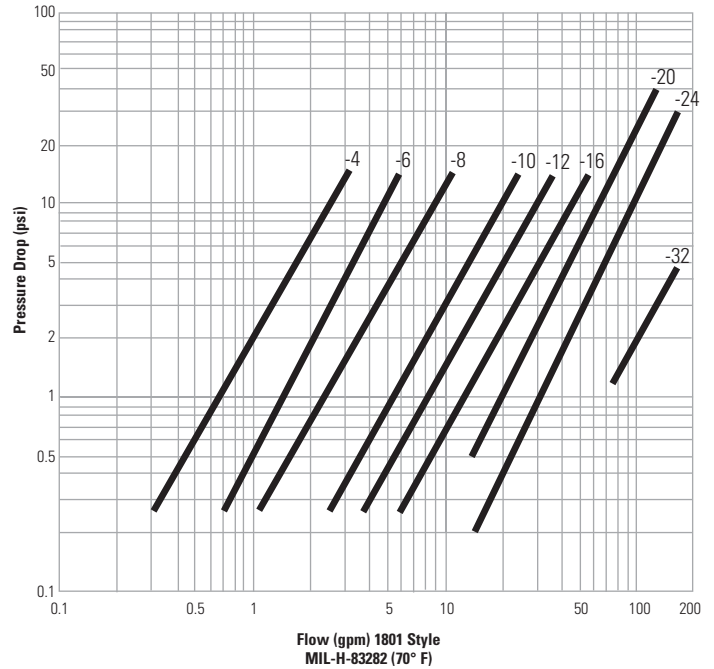
1. Find the flow rate at the bottom of the chart and read up until the line intersects the curve for the coupling size in question.
2. Read across to find pressure loss.



**1800 Series  
3000 psig Couplings**



**1801 Series  
1000 psig Couplings**



## Design Data

**To connect:** rotate union mechanisms until teeth are fully engaged.

**To disconnect:** retract union sleeve and rotate union mechanism until disengaged.

For added safety, a thread polarity feature prohibits cross connection of high and low pressure coupling halves. Eaton's Aeroquip Brand low profile ratchet lock couplings are available for use with various hydraulic fluids.

### 1800 Series 3000 psig Coupling

**Basic Material**..... Stainless Steel

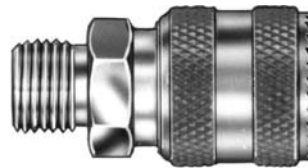
**Packings**..... Nitrile (Petroleum Based) or EPR (Skydrol Systems) Teflon Back-Up Rings

**Application**..... MIL-H-5606, MIL-H-83282  
Hydraulic Systems, Skydrol

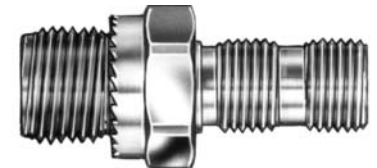
**Temperature Range**.. 65°F. to +275°F.  
(-54°C. to +135°C.)

**Operating Pressure**.. 3000 psig  
Proof: 4500 psig  
Minimum Burst: 7500 psig

Meets the performance requirements of MIL-C-25427A.



Hose Attachment Half



Bulkhead Mounting Half

### 1801 Series 1000 psig Coupling

**Basic Material**..... Aluminum

**Packings**..... Nitrile (Petroleum Based) or EPR (Skydrol Systems)

**Application**..... MIL-H-5606, MIL-H-83282  
Hydraulic Systems, Skydrol

**Temperature Range**.. -65°F. to +275°F.  
(-54°C. to +135°C.)

**Operating Pressure**.. 1000 psig for -4, -6, -8, -10, -12 and -16 sizes;  
600 psig for -20, -24 and -32 sizes

Meets the performance requirements of AS1709 or MIL-C-25427A, except operating pressures.

# Aeroquip Brand

## 1800 Series

### 3000 Psig Low Profile Couplings

#### Sizes, Applications and Part Numbers

Aeroquip brand couplings are available with all standard type end fitting combinations. To order, select the style, application, size and corresponding part

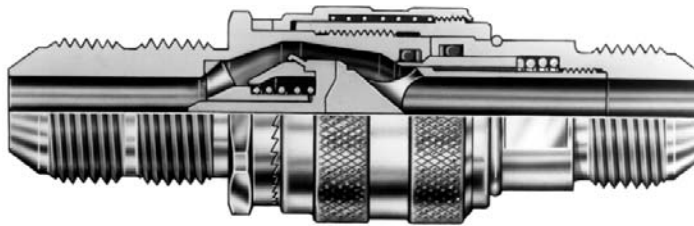
number for coupling halves or complete coupling assembly from the table below. (Example: Style 1, MIL H 5606, 4 Size, complete assembly: AE99105E).

Aeroquip brand couplings for other fluids and end fittings are also available. Contact your nearest Eaton Fluid Conveyance distributor, sales engineer or write

directly to Eaton Fluid Conveyance for full information.

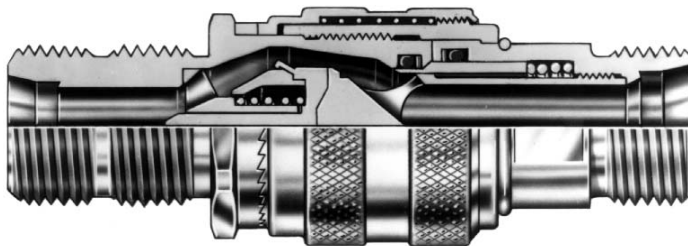
Dust caps and plugs are available for all sizes, See page 2.

**Style I**  
AS4396 & AS4395 ends



Size	Operating Pressure (psig)	Coupling Assembly		Coupling Half Bulkhead Mounting		Coupling Half Hose Attaching		Coupling Assembly Weight (Lbs)
		MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	
-4	3000	AE99105E	AE99109E	AE99106E	AE99110E	AE99107E	AE99111E	0.190
-6	3000	AE99105G	AE99109G	AE99106G	AE99110G	AE99107G	AE99111G	0.281
-8	3000	AE99105H	AE99109H	AE99106H	AE99110H	AE99107H	AE99111H	0.497
-10	3000	AE99105J	AE99109J	AE99106J	AE99110J	AE99107J	AE99111J	0.871
-12	3000	AE99105K	AE99109K	AE99106K	AE99110K	AE99107K	AE99111K	1.002
-16	3000	AE99105M	AE99109M	AE99106M	AE99110M	AE99107M	AE99111M	1.389

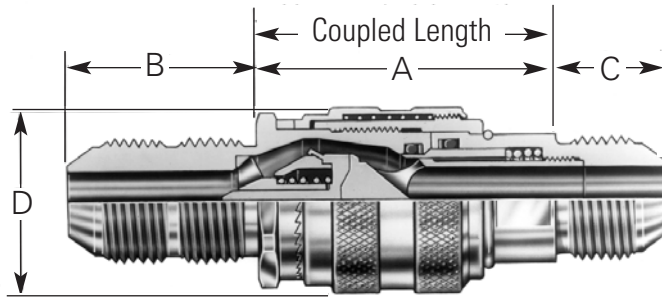
**Style II**  
AS33515 & AS33514



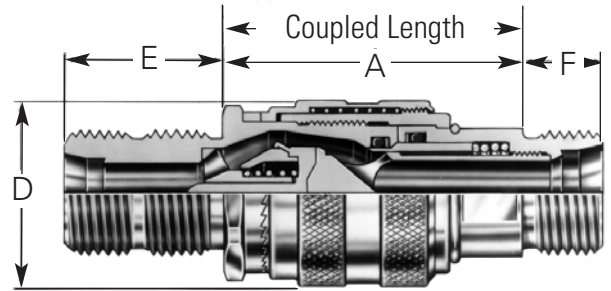
Size	Operating Pressure (PSIG)	Coupling Assembly		Coupling Half Bulkhead Mounting		Coupling Half Hose Attaching		Coupling Assembly Weight (Lbs)
		MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	
-4	3000	AE99113E	AE99117E	AE99114E	AE99118E	AE99115E	AE99119E	0.185
-6	3000	AE99113G	AE99117G	AE99114G	AE99118G	AE99115G	AE99119G	0.267
-8	3000	AE99113H	AE99117H	AE99114H	AE99118H	AE99115H	AE99119H	0.470
-10	3000	AE99113J	AE99117J	AE99114J	AE99118J	AE99115J	AE99119J	0.833
-12	3000	AE99113K	AE99117K	AE99114K	AE99118K	AE99115K	AE99119J	0.951
-16	3000	AE99113M	AE99117M	AE99114M	AE99118M	AE99115M	AE99119M	1.304

# Coupling Dimensions

Style I



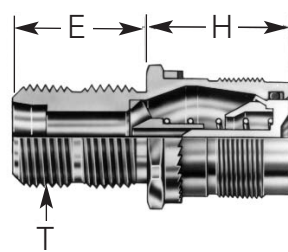
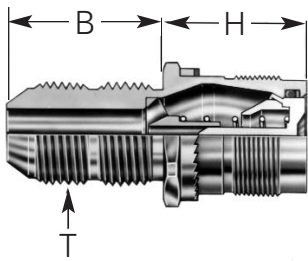
Style II



Coupling Half, Bulkhead Mounting

Style I

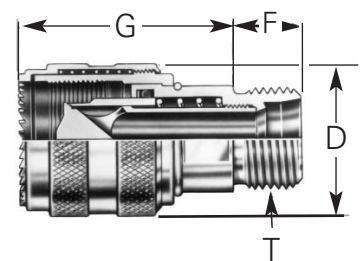
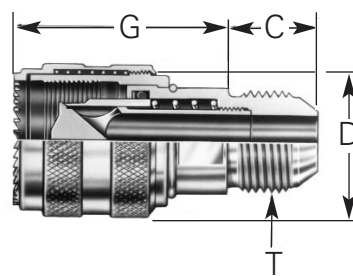
Style II



Coupling Half, Hose Attaching

Style I

Style II



Dash Size	-4	-6	-8	-10	-12	-16
Letter Code	E	G	H	J	K	M
Tube Size	1/4"	3/8"	1/2"	5/8"	3/4"	1"
A	1.592	1.751	2.032	2.470	2.590	3.000
B	1.047	1.125	1.281	1.422	1.593	1.593
C	0.550	0.556	0.657	0.758	0.864	0.911
D Max	0.90	1.00	1.19	1.48	1.64	1.91
E	0.969	1.015	1.156	1.297	1.406	1.406
F	0.453	0.469	0.562	0.625	0.688	0.688
G	1.132	1.295	1.510	1.923	2.310	2.550
H	0.992	1.051	1.262	1.510	1.510	1.760
Thd "T"	0.4375-20 UNJF-3A	0.5625-18 UNJF-3A	0.7500-16 UNJF-3A	0.8750-14 UNJF-3A	0.0625-12 UNJF-3A	0.3125-12 UNJF-3A
Uncoupled Length	2.18	2.40	2.82	3.48	3.85	4.34

NOTE: All Dimensions in inches

# Aeroquip Brand 1801 Series 1000 Psig Low Pressure Couplings

## Sizes, Applications and Part Numbers

Aeroquip brand couplings are available with all standard type end fitting combinations. To order, select the style, application, size and corresponding part

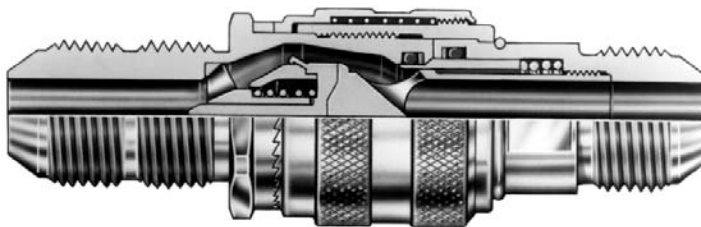
number for coupling halves or complete coupling assembly from the table below. (Example: Style 1, MIL-H-5606, -4 Size, complete assembly: AE99134E).

Aeroquip brand couplings for other fluids and end fittings are also available. Contact your nearest Eaton Fluid Conveyance distributor, sales engineer or write

directly to Eaton Fluid Conveyance for full information.

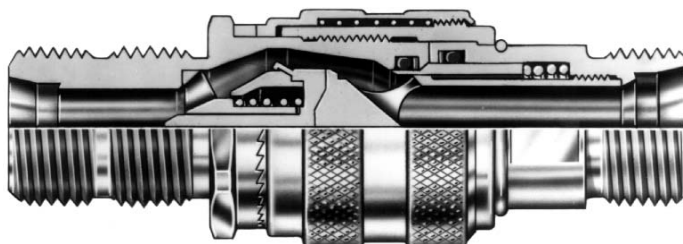
Dust caps and plugs are available for all sizes. See page 2.

### Style I AS4396 & AS4395 ends



Size	Operating Pressure (psig)	Coupling Assembly		Coupling Half Bulkhead Mounting		Coupling Half Hose Attaching		Coupling Assembly Weight (Lbs.)
		MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	
-4	1000	AE99134E	AE99138E	AE99135E	AE99139E	AE99136E	AE99140E	0.085
-6	1000	AE99134G	AE99138G	AE99135G	AE99139G	AE99136G	AE99140G	0.132
-8	1000	AE99134H	AE99138H	AE99135H	AE99139H	AE99136H	AE99140H	0.226
-10	1000	AE99134J	AE99138J	AE99135J	AE99139J	AE99136J	AE99140J	0.399
-12	1000	AE99134K	AE99138K	AE99135K	AE99139K	AE99136K	AE99140K	0.486
-16	1000	AE99134M	AE99138M	AE99135M	AE99139M	AE99136M	AE99140M	0.686
-20	600	AE99134N	AE99138N	AE99135N	AE99139N	AE99136N	AE99140N	1.156
-24	600	AE99134P	AE99138P	AE99135P	AE99139P	AE99136P	AE99140P	1.852
-32	600	AE99134R	AE99138R	AE99135R	AE99139R	AE99136R	AE99140R	3.48

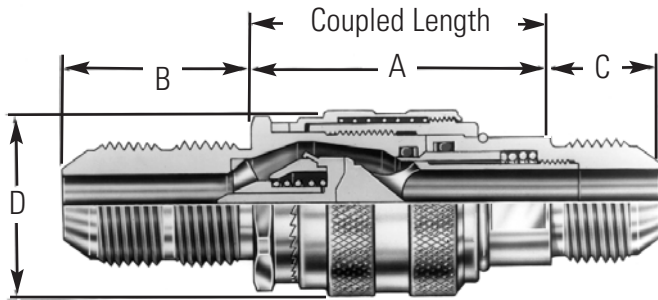
### Style II AS33515 & AS33514



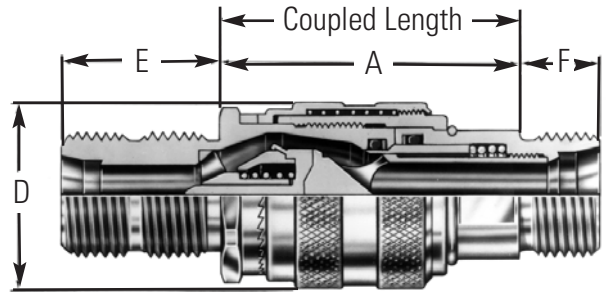
Size	Operating Pressure (psig)	Coupling Assembly		Coupling Half Bulkhead Mounting		Coupling Half Hose Attaching		Coupling Assembly Weight (Lbs)
		MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	MIL-H-5606 MIL-H-83282	Skydrol	
-4	1000	AE99142E	AE99146E	AE99143E	AE99147E	AE99144E	AE99148E	0.083
-6	1000	AE99142G	AE99146G	AE99143G	AE99147G	AE99144G	AE99148G	0.129
-8	1000	AE99142H	AE99146H	AE99143H	AE99147H	AE99144H	AE99148H	0.220
-10	1000	AE99142J	AE99146J	AE99143J	AE99147J	AE99144J	AE99148J	0.383
-12	1000	AE99142K	AE99146K	AE99143K	AE99147K	AE99144K	AE99148K	0.468
-16	1000	AE99142M	AE99146M	AE99143M	AE99147M	AE99144M	AE99148M	0.652
-20	600	AE99142N	AE99146N	AE99143N	AE99147N	AE99144N	AE99148N	1.123
-24	600	AE99142P	AE99146P	AE99143P	AE99147P	AE99144P	AE99148P	1.811
-32	600	AE99142R	AE99146R	AE99143R	AE99147R	AE99144R	AE99148R	3.22

# Coupling Dimensions

Style I

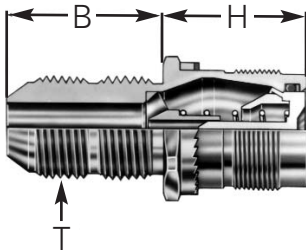


Style II

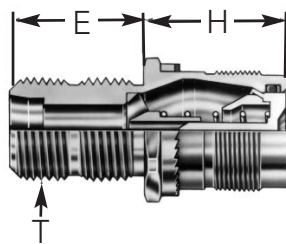


Coupling Half, Bulkhead Mounting

Style I

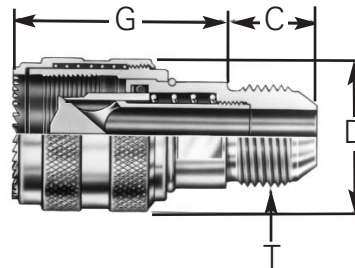


Style II

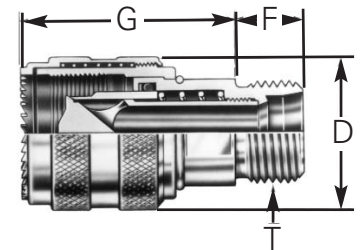


Coupling Half, Hose Attaching

Style I



Style II



Dash Size	-4	-6	-8	-10	-12	-16	-20	-24	-32
Letter Code	E	G	H	J	K	M	N	P	R
Tube Size	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"
A	1.592	1.751	2.032	2.470	2.590	3.000	3.248	3.710	4.580
B	1.047	1.125	1.281	1.422	1.593	1.593	1.640	1.656	1.937
C	0.550	0.556	0.657	0.758	0.864	0.911	0.958	1.083	1.333
D Max	0.90	1.00	1.19	1.46	1.64	1.91	2.50	2.90	3.49
E	0.969	1.015	1.156	1.297	1.406	1.406	1.406	1.406	1.609
F	0.453	0.469	0.562	0.625	0.688	0.688	0.688	0.688	0.688
G	1.132	1.295	1.510	1.923	2.310	2.550	2.742	3.187	3.580
H	0.992	1.051	1.262	1.510	1.510	1.760	2.108	2.380	2.950
Thd "T"	0.4375-20 UNJF-3A	0.5625-18 UNJF-3A	0.7500-16 UNJF-3A	0.8750-14 UNJF-3A	1.0625-12 UNJ-3A	1.3125-12 UNJ-3A	1.6250-12 UNJ-3A	1.8750-12 UNJ-3A	2.2500-12 UNJ-3A
Uncoupled Length	2.18	2.40	2.82	3.48	3.85	4.34	4.89	5.61	6.57

NOTE: All Dimensions in inches

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