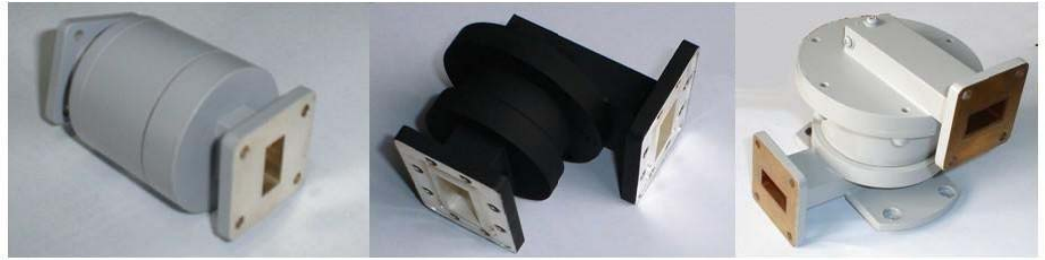


# 10 Waveguide Rotary Joint

## 10.1 Waveguide Single Channel Rotary Joint

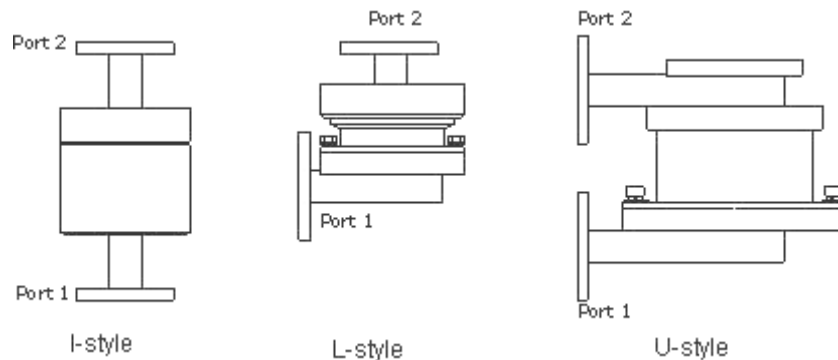


Rotary Joints (rotary couplers) are used to transmit microwave energy from stationary lines to rotating lines. The rotary joint is an electro-mechanical device with RF performance dependent upon rigorous electrical and mechanical design. Available styles are defined by physical geometry as follows:

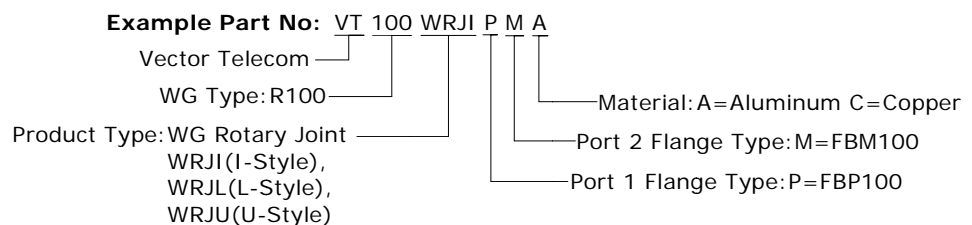
I-style - Two in-line arms both collinear with the axis of rotation.

L-style - One arm is perpendicular to the axis of rotation.

U-style - Both arms are perpendicular to the axis of rotation.



### 【Ordering Information】



- Flange type: Multiple types available - see VT Flanges page
- Finish: Corrosion protection plus black top coat

# 10

## Waveguide Rotary Joint





## 10.1.1 I Type Waveguide Rotary Joint

### 【Specifications】

Model No	Freq Range (GHz)	Operating Bandwidth (MHz)	VSWR (Max)	VSWR WOW	IL(dB) (Max)	IL WOW (dB)	WG Type		Material
							IEC	EIA	
VT32WRJI	2.60-3.95	200	1.2	0.05	0.3	0.1	R32	WR284	Al/Cu
VT40WRJI	3.22-4.90	200	1.2	0.05	0.3	0.1	R40	WR229	Al/Cu
VT48WRJI	3.94-5.99	200	1.2	0.05	0.3	0.1	R48	WR187	Al/Cu
VT58WRJI	4.64-7.05	300	1.25	0.05	0.25	0.1	R58	WR159	Al/Cu
VT70WRJI	5.38-8.17	700	1.25	0.05	0.25	0.1	R70	WR137	Al/Cu
VT84WRJI	6.57-9.99	300	1.2	0.05	0.3	0.1	R84	WR112	Al/Cu
VT100WRJI	8.20-12.4	300	1.2	0.05	0.3	0.1	R100	WR90	Al/Cu
VT120WRJI	9.84-15.0	500	1.25	0.05	0.3	0.1	R120	WR75	Al/Cu
VT140WRJI	11.9-18.0	1000	1.3	0.05	0.4	0.1	R140	WR62	Al/Cu
VT180WRJI	14.5-22.0	1000	1.3	0.05	0.4	0.1	R180	WR51	Al/Cu
VT220WRJI	17.6-26.7	2000	1.4	0.05	1	0.1	R220	WR42	Al/Cu
VT260WRJI	21.7-33.0	2000	1.4	0.05	1	0.1	R260	WR34	Al/Cu
VT320WRJI	26.3-40.0	2000	1.4	0.05	1	0.1	R320	WR28	Al/Cu

\*Indicates Model Number. See Ordering Information for complete part number.

## 10.1.2 L Type Waveguide Rotary Joint

### 【Specifications】

Model No	Freq Range (GHz)	Operating Bandwidth (MHz)	VSWR (Max)	VSWR WOW	IL(dB) (Max)	IL WOW (dB)	WG Type		Material
							IEC	EIA	
VT32WRJL	2.60-3.95	200	1.2	0.05	0.3	0.1	R32	WR284	Al/Cu
VT40WRJL	3.22-4.90	200	1.2	0.05	0.3	0.1	R40	WR229	Al/Cu
VT48WRJL	3.94-5.99	200	1.2	0.05	0.3	0.1	R48	WR187	Al/Cu
VT58WRJL	4.64-7.05	300	1.25	0.05	0.25	0.1	R58	WR159	Al/Cu
VT70WRJL	5.38-8.17	700	1.25	0.05	0.25	0.1	R70	WR137	Al/Cu
VT84WRJL	6.57-9.99	300	1.2	0.05	0.3	0.1	R84	WR112	Al/Cu
VT100WRJL	8.20-12.4	300	1.2	0.05	0.3	0.1	R100	WR90	Al/Cu
VT120WRJL	9.84-15.0	500	1.25	0.05	0.3	0.1	R120	WR75	Al/Cu
VT140WRJL	11.9-18.0	1000	1.3	0.05	0.4	0.1	R140	WR62	Al/Cu
VT180WRJL	14.5-22.0	1000	1.3	0.05	0.4	0.1	R180	WR51	Al/Cu
VT220WRJL	17.6-26.7	2000	1.4	0.05	1	0.1	R220	WR42	Al/Cu
VT260WRJL	21.7-33.0	2000	1.4	0.05	1	0.1	R260	WR34	Al/Cu
VT320WRJL	26.3-40.0	2000	1.4	0.05	1	0.1	R320	WR28	Al/Cu

\*Indicates Model Number. See Ordering Information for complete part number.

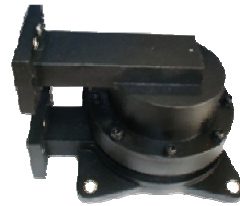
## 10.1.3 U Type Waveguide Rotary Joint

### 【Specifications】

Model No	Freq Range (GHz)	Operating Bandwidth (MHz)	VSWR (Max)	VSWR WOW	IL(dB) (Max)	IL WOW (dB)	WG Type		Material
							IEC	EIA	
VT32WRJU	2.60-3.95	200	1.2	0.05	0.3	0.1	R32	WR284	Al/Cu
VT40WRJU	3.22-4.90	200	1.2	0.05	0.3	0.1	R40	WR229	Al/Cu
VT48WRJU	3.94-5.99	200	1.2	0.05	0.3	0.1	R48	WR187	Al/Cu
VT58WRJU	4.64-7.05	300	1.25	0.05	0.25	0.1	R58	WR159	Al/Cu
VT70WRJU	5.38-8.17	700	1.25	0.05	0.25	0.1	R70	WR137	Al/Cu
VT84WRJU	6.57-9.99	300	1.2	0.05	0.3	0.1	R84	WR112	Al/Cu
VT100WRJU	8.20-12.4	300	1.2	0.05	0.3	0.1	R100	WR90	Al/Cu
VT120WRJU	9.84-15.0	500	1.25	0.05	0.3	0.1	R120	WR75	Al/Cu
VT140WRJU	11.9-18.0	1000	1.3	0.05	0.4	0.1	R140	WR62	Al/Cu
VT180WRJU	14.5-22.0	1000	1.3	0.05	0.4	0.1	R180	WR51	Al/Cu
VT220WRJU	17.6-26.7	2000	1.4	0.05	1	0.1	R220	WR42	Al/Cu
VT260WRJU	21.7-33.0	2000	1.4	0.05	1	0.1	R260	WR28	Al/Cu
VT320WRJU	26.3-40.0	2000	1.4	0.05	1	0.1	R320	WR28	Al/Cu

\*Indicates Model Number. See Ordering Information for complete part number.

## 10.2 High Power Waveguide Rotary Joint



### 【Specifications】

Model No*	WG Type EIA	Freq Range (GHz)	Working bandwidth	VSWR	IL (dB)	Avg Power(W)	Flange	Material
VT32WHPRJUTM01	WR284	2.60-3.95	≤5%	≤1.15	≤0.20	3000	FDP	Al
VT40WHPRJUTM01	WR229	3.22-4.90	≤5%	≤1.15	≤0.20	3000	FDP	Al
VT48WHPRJUTM01	WR187	3.94-5.99	≤5%	≤1.15	≤0.20	3000	FDP	Al
VT58WHPRJUTM01	WR159	4.64-7.05	≤5%	≤1.15	≤0.20	3000	FDP	Al
VT70WHPRJUTM01	WR137	5.38-8.17	≤5%	≤1.15	≤0.20	2000	FDP	Al
VT84WHPRJUTM01	WR112	6.57-9.99	≤5%	≤1.20	≤0.20	2000	FBP	Cu
VT100WHPRJUTM01	WR90	8.20-12.5	≤5%	≤1.20	≤0.20	2000	FBP	Cu
VT120WHPRJUTM01	WR75	9.84-15.0	≤5%	≤1.20	≤0.20	1000	FBP	Cu
VT140WHPRJUTM01	WR62	11.9-18.0	≤5%	≤1.25	≤0.20	2000	FBP	Cu
VT180WHPRJUTM01	WR51	14.5-22.0	≤5%	≤1.25	≤0.25	500	FBP	Cu
VT220WHPRJUTM01	WR42	17.6-26.7	≤5%	≤1.25	≤0.25	500	FBP	Cu
VT260WHPRJUTM01	WR34	21.7-33.0	≤5%	≤1.25	≤0.25	300	FBP	Cu
VT320WHPRJUTM01	WR28	26.5-40.0	≤5%	≤1.25	≤0.25	300	FBP	Cu

\*Indicates Model Number. See Ordering Information for complete part number.

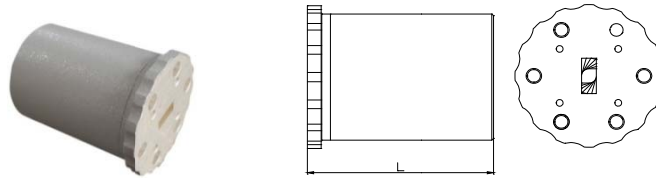
# 10

## Waveguide Rotary Joint





## 10.3 90° Polarized Rotary Joint

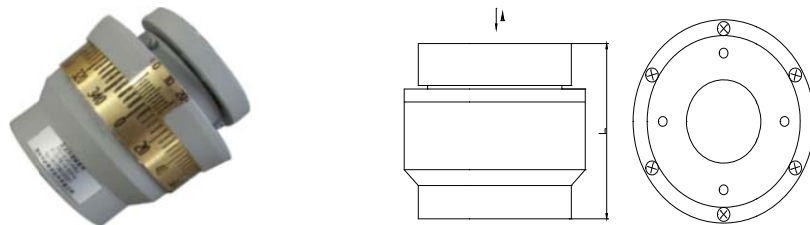


### 【Specifications】

Model No*	WG Type EIA	Freq Range (GHz)	VSWR (Max)	IL(dB)	Avg Power(W)	Flange	Material
VT70WRJIT	WR137	5.38-8.17	≤1.25	≤0.3	200W	FDP	Cu
VT84WRJIT	WR112	6.57-9.99	≤1.25	≤0.3	100W	FBP	Cu
VT100WRJIT	WR90	8.20-12.5	≤1.25	≤0.3	100W	FBP	Cu
VT120WRJIT	WR75	9.84-15.0	≤1.25	≤0.3	100W	FBP	Cu
VT140WRJIT	WR62	11.9-18.0	≤1.25	≤0.3	100W	FBP	Cu
VT180WRJIT	WR51	14.5-22.0	≤1.25	≤0.3	50W	FBP	Cu
VT220WRJIT	WR42	17.6-26.7	≤1.4	≤0.3	50W	FBP	Cu
VT260WRJIT	WR34	21.7-33.0	≤1.5	≤0.3	50W	FBP	Cu
VT320WRJIT	WR28	26.5-40.0	≤1.5	≤0.3	50W	FBP	Cu

\*Indicates Model Number. See Ordering Information for complete part number.

## 10.4 Circular Waveguide Rotary Joint



### 【Specifications】

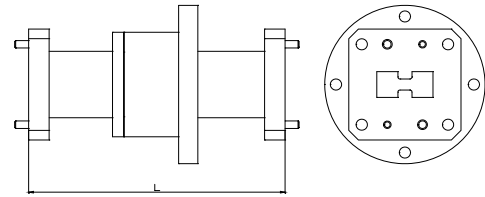
Model No*	Freq Range (GHz)	VSWR (Max)	IL(dB)	Avg Power	Circular Waveguide Diameter (mm)	Flange	Material	Finish
VT100CWRJI	2.0-4.0	≤1.20	≤0.2	200W	100	FAP	Al	Chromate conversion
VT61.04CWRJI	3.3-3.8	≤1.20	≤0.2	200W	61.04	FAP	Al	Chromate conversion
VT51.99CWRJI	3.89-5.33	≤1.20	≤0.2	200W	51.99	FAP	Al	Chromate conversion
VT37CWRJI	4.5-6.5	≤1.20	≤0.2	200W	37	FAP	Al	Chromate conversion
VT27.78CWRJI	7.4-9.0	≤1.20	≤0.2	200W	27.78	FAP	Al	Chromate conversion
VT23.825CWRJI	9.1-10.0	≤1.20	≤0.2	100W	23.825	FAP	Al	Chromate conversion
VT20.244CWRJI	8.5-10.5	≤1.20	≤0.2	100W	20.244	FAP	Al	Chromate conversion
VT14CWRJI	15.0-17.0	≤1.20	≤0.2	100W	14	FAP	Cu	Silver Plating



Model No*	Freq Range (GHz)	VSWR (Max)	IL(dB)	Avg Power	Circular Waveguide Diameter (mm)	Flange	Material	Finish
VT11.25CWRJI	18.2-24.9	≤1.20	≤0.2	100W	11.25	FAP	Cu	Silver Plating
VT11CWRJI	17.7-21.2	≤1.20	≤0.2	100W	11	FAP	Cu	Silver Plating
VT7.137CWRJI	27.5-31	≤1.20	≤0.2	100W	7.137	FAP	Cu	Silver Plating

\*Indicates Model Number. See Ordering Information for complete part number.

### 10.5 Double-Ridged Waveguide Rotary Joint



#### 【Specifications】

Model No*	WG Type EIA	Freq Range (GHz)	VSWR (Max)	IL(dB)	Avg Power	Flange	Material
VT84DRWRJI	WRD84	0.84-2	≤1.5	≤0.5	200W	FP	Cu
VT150DRWRJI	WRD150	1.5-3.6	≤1.5	≤0.5	200W	FP	Cu
VT200DRWRJI	WRD200	2-4.8	≤1.5	≤0.5	200W	FP	Cu
VT250DRWRJI	WRD250	2.6-7.8	≤1.5	≤0.5	200W	FP	Cu
VT350DRWRJI	WRD350	3.5-8.2	≤1.5	≤0.5	200W	FP	Cu
VT475DRWRJI	WRD475	4.75-11	≤1.5	≤0.5	100W	FP	Cu
VT500DRWRJI	WRD500	5-18	≤1.5	≤0.5	100W	FP	Cu
VT580DRWRJI	WRD580	5.8-16	≤1.5	≤0.5	100W	FP	Cu
VT650DRWRJI	WRD650	6.5-18	≤1.5	≤0.5	100W	FP	Cu
VT700DRWRJI	WRD750	7-18.5	≤1.5	≤0.5	100W	FP	Cu
VT750DRWRJI	WRD700	7.5-18	≤1.5	≤0.5	100W	FP	Cu
VT1100DRWRJI	WRD110	11-26.5	≤1.8	≤0.8	50W	FP	Cu
VT1800DRWRJI	WRD180	18-40	≤2.0	≤0.8	30W	FP	Cu

\*Indicates Model Number. See Ordering Information for complete part number.

#### 【Ordering Information】

**Example Part No:** VT 100 DRWRJ I P M A

Vector Telecom | 100 | DRWRJ | I | P | M | A

WG Type: R100 | Material: A=Aluminum C=Copper

Product Type: Double Ridged | Port 2 Flange Type: FBM

WG Rotary Joint | Port 1 Flange Type: FBP

WRJI (I-style), WRJL (L-style), WRJU (U-style)



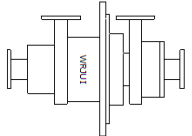
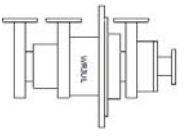
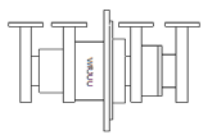
Code	Description
WHPRJUTM01	High Power Waveguide Rotary Joint
WRJIT	90° Polarized Rotary Joint
CWRJI	Circular Waveguide Rotary Joint
DRWRJI	Double-Ridged Waveguide Rotary Joint

- Flange type: Multiple types available - see VT Flanges page
- Finish: Corrosion protection plus black top coat

### 10.6 Waveguide Dual-Channel Rotary Joint



#### 【Structure Type】

Model	UI	UL	UU
Description	Dual-Channel U+I Type	Dual-Channel U+L Type	Dual-Channel U+U Type
Drawing			
Channel Isolation	≥50dB	≥50dB	≥50dB

#### 【WRJUI Specifications】

Model No*	WG Type EIA	Freq Range (GHz)	Working bandwidth	VSWR (Max)	IL(d B)	Avg Power (W)	Peak power (KW)	Flange	Material
VT32WRJUI	WR284	2.60-3.95	≤10%	≤1.25	≤0.3	600	600	FDP	Al
VT40WRJUI	WR229	3.22-4.90	≤10%	≤1.25	≤0.3	600	600	FDP	Al
VT48WRJUI	WR187	3.94-5.99	≤10%	≤1.25	≤0.3	600	600	FDP	Al
VT58WRJUI	WR159	4.64-7.05	≤10%	≤1.25	≤0.3	500	150	FDP	Al
VT70WRJUI	WR137	5.38-8.17	≤10%	≤1.25	≤0.3	500	150	FDP	Cu
VT84WRJUI	WR112	6.57-9.99	≤10%	≤1.25	≤0.3	400	150	FBP	Cu
VT100WRJUI	WR90	8.20-12.5	≤10%	≤1.25	≤0.3	400	150	FBP	Cu
VT120WRJUI	WR75	9.84-15.0	≤10%	≤1.25	≤0.3	100	10	FBP	Cu