



**FLEXIBLE WAVEGUIDE**

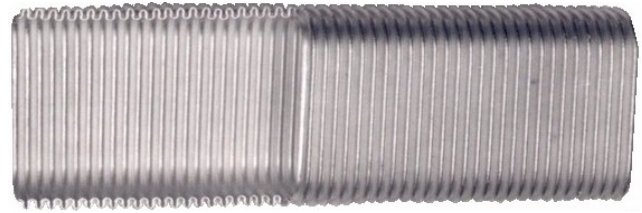
**170FT SERIES      170S SERIES**  
**R170FT SERIES      R170S SERIES**

**DATA SHEET**  
**No. T21E**  
**1 OF 4**

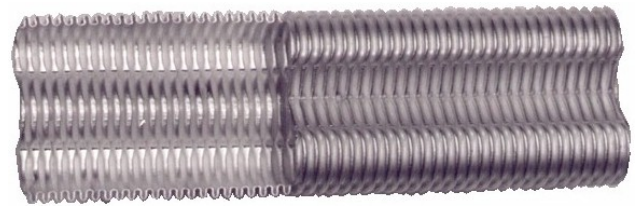
Because of its many unique characteristics, Flexible Waveguide has found wide use as a component in microwave equipment. System and laboratory problems associated with shock, vibration, tolerance take-up due to misalignment or temperature variations, ease of assembly and disassembly, etc., are ideally solved by inclusion of this versatile transmission medium.

**SEAMLESS & SIDESEAM CORRUGATED FLEXIBLE WAVEGUIDE**

MEC's Rectangular and Double-Ridge Seamless Corrugated Flexible Waveguide are made by convoluting seamless tubing. Rectangular waveguide sizes larger than WR-137 are made Sideseam. All units are inherently pressure-tight, highly stable, rugged, and have no R-F leakage. They will bend more than the flexible-twistable types but cannot withstand any twisting. Bends are semi-permanent and small bends radii should be factory formed. Unless requested, units are supplied without jacket or silver plating.



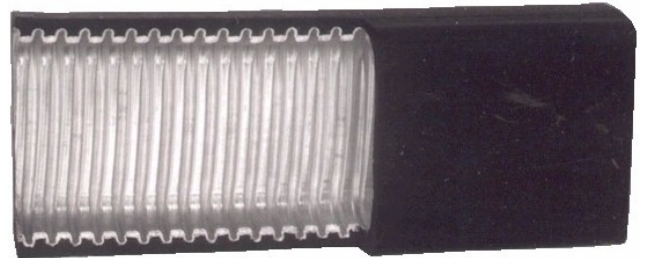
**170S SERIES**



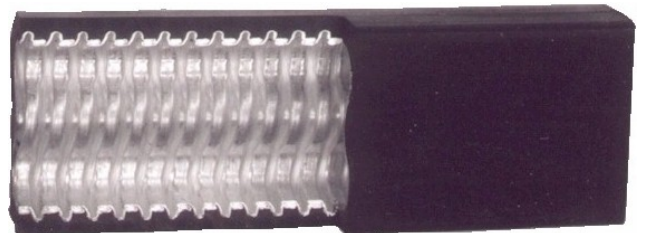
**R170S SERIES**

**FLEXIBLE-TWISTABLE WAVEGUIDE (FOR SPECIAL APPLICATIONS)**

Microwave Engineering Corporation's Rectangular and Double-Ridge Flexible-Twistable Waveguide are of the convoluted type of construction. They are precision-wound in accordance with strict design standards, which assure long life and excellent electrical performance. Adjacent turns are securely crimp-locked together forming a continuous joint. All units are supplied with a molded jacket of neoprene and are available with MEC's Flangelok Molding Process, which eliminates flange separation problems under conditions of extreme tension.



**170FT SERIES**



**R170FT SERIES**

Besides the standard units described on the following pages, Microwave Engineering Corporation produces many special assemblies such as twists and pre-formed bends to much smaller radii to satisfy unique requirements. Additionally, combinations of rigid and flexible waveguide, jacketed or unjacketed, with built-in pressure/relief valves, quick-disconnect flanges, etc., are readily available. All units are manufactured in accordance with strict design standards, which assure long life under adverse field conditions.





# RECTANGULAR SEAMLESS & SIDESEAM CORRUGATED FLEXIBLE WAVEGUIDE 170S SERIES

DATA  
SHEET  
No. T21E  
2 OF 4

- NO RF LEAKAGE
- FACTORY PREFORMABLE
- LIGHTWEIGHT
- ISOLATES SHOCK



## SPECIFICATIONS

WAVEGUIDE SIZE	MEC NO.	FREQUENCY (GHz)	VSWR (STRAIGHT SECTION MAX.)	ATTEN. (DB/FT. MAX)	PRESSURE (PSIG MAX.)	MINIMUM BEND RADIUS TO CENTER LINE (INCHES)	
						E	H
WR-770	E170S	1.00 – 1.45	1.04	.004	10	14.0	32.0
WR-650	L170S	1.12 – 1.70	1.04	.005	15	12.0	25.0
WR-510	LM170S	1.45 – 2.20	1.05	.008	18	10.0	19.0
WR-430	LA170S	1.70 – 2.60	1.05	.009	20	8.0	13.0
WR-340	LS170S	2.20 – 3.30	1.05	.015	25	4.5	9.0
WR-284	S170S	2.60 – 3.95	1.06	.017	30	4.0	5.75
WR-229	B170S	3.30 – 4.90	1.06	.02	30	3.5	5.5
WR-187	G170S	3.95 – 5.85	1.06	.03	30	2.75	5.0
WR-159	D170S	4.90 – 7.05	1.08	.04	35	2.0	3.5
WR-137	J170S	5.85 – 8.20	1.08	.05	34	1.5	2.75
WR-112	H170S	7.05 – 10.0	1.10	.06	45	1.25	2.25
WR-102	W170S	7.00 – 11.0	1.10	.08	55	1.13	2.0
WR-90	X170S	8.20 – 12.4	1.10	.10	60	1.0	1.75
WR-75	M170S	10.0 – 15.0	1.12	.12	60	.87	1.37
WR-62	P170S	12.4 – 18.0	1.12	.15	60	.75	1.25
WR-51	N170S	15.0 – 22.0	1.15	.25	80	.75	1.25
WR-42	K170S	18.0 – 26.5	1.20	.35	100	.38	.75
WR-28	A170S	26.5 – 40.0	1.35	.50	100	.32	.56

\*Unless requested, units are supplied without jacket.

## ORDERING INFORMATION

To order, use the MEC part numbering system illustrated below.

H170S - 9 - 1 - 2

WAVEGUIDE		LENGTH IN INCHES (± 1/8")	FLANGE	
SIZE	CODE		TYPE +	CODE
WR-112	H170S	INSET LENGTH DESIRED	COVER	1
			CHOKE	2
			CMR	3
			CPR (F)	4
			CPR (G)	5

+ See MEC Data Sheet T71A for equivalent UG No.





# RECTANGULAR FLEXIBLE - TWISTABLE WAVEGUIDE 170FT SERIES

**DATA SHEET**  
**No. T21E**  
**3 OF 4**

- ENVIRONMENTALLY QUALIFIED
- CUSTOM FIT
- LONG LIFE



## SPECIFICATIONS

WAVEGUIDE SIZE	MEC NO.	FREQUENCY (GHz)	VSWR (STRAIGHT SECTION MAX.)	ATTEN. (DB/FT. MAX.)	PRESSURE (PSIG)‡	MINIMUM BEND RADIUS TO CENTER LINE (INCHES)		MAXIMUM TWIST (DEG./FT.)
						E	H	
WR-284	S170FT	2.60 - 3.95	1.07	0.02	10	7.0	9.50	45
WR-229	B170FT	3.30 - 4.90	1.06	0.02	15	5.5	12.0	50
WR-187	G170FT	3.95 - 5.85	1.06	0.05	15	4.5	11.0	60
WR-159	D170FT	4.90 - 7.05	1.06	0.06	15	4.0	10.0	65
WR-137	J170FT	5.85 - 8.20	1.06	0.08	15	3.5	8.0	70
WR-112	H170FT	7.05 - 10.0	1.08	0.08	30	3.0	6.0	85
WR-102	W170FT	7.0 - 11.0	1.10	0.09	30	2.5	5.0	90
WR-90	X170FT	8.2 - 12.4	1.10	0.10	30	1.5	3.0	95
WR-75	M170FT	10.0 - 15.0	1.10	0.15	30	1.37	2.5	100
WR-62	P170FT	12.4 - 18.0	1.12	0.20	30	1.25	2.25	130
WR-51	N170FT	15.0 - 22.0	1.15	0.35	30	1.18	2.15	145
WR-42	K170FT	18.0 - 26.5	1.2	0.35	30	1.1	2.1	145

‡ For units requiring higher pressures, please contact MEC.

## ORDERING INFORMATION

To order, use the MEC part numbering system illustrated below.

B170FT-19-1-2-N

WAVEGUIDE		LENGTH IN INCHES (± 1/8")	FLANGE		JACKET		
SIZE	CODE		TYPE +	CODE	MATERIAL *	CODE	
WR-229	B170FT	INSERT LENGHT DESIRED	COVER	1	NEOPRENE PER MIL-STD-417, CLASS SB		N
			CHOKE	2	SILICONE PER ZZ-R-765, CLASS 2a		S
			CMR	3			
			CPR (F)	4			
			CPR (G)	5			

+ See MEC Data Sheet T71A for equivalent UG No.

\* Standard jacket supplied is neoprene





**DOUBLE-RIDGE SEAMLESS CORRUGATED FLEXIBLE WAVEGUIDE  
DOUBLE-RIDGE FLEXIBLE-TWISTABLE WAVEGUIDE**

R170S SERIES

R170FT SERIES

**DATA SHEET  
No. T21E  
4 OF 4**

- OPERATES OVER FULL FREQUENCY BAND
- ENVIRONMENTALLY QUALIFIED
- SUPERIOR ELECTRICAL STABILITY
- PRESSURIZABLE



**SPECIFICATION**

WAVEGUIDE SIZE	MEC NO.	FREQUENCY (GHz)	VSWR (STRAIGHT SECTION MAX.)	ATTEN. (DB/FT. MAX.)	PRESSURE (PSIG)‡	MINIMUM BEND RADIUS TO CENTER LINE (INCHES)		MAXIMUM TWIST (DEG./FT.)
						E	H	
<b>DOUBLE-RIDGE SEAMLESS CORRUGATED FLEXIBLE WAVEGUIDE WITHOUT JACKET‡</b>								
WRD-180C24	R175S	18.0 – 40.0	1.35	0.90	80	2.0	4.0	—
WRD-750D24	R170S	7.5 – 18.5	1.15	0.20	35	3.25	6.0	—
WRD-650D28	R177S	6.5 – 18.5	1.15	0.25	35	3.25	6.0	—
WRD-580DD28	R178S	5.8-14.5	1.3	0.30	30	4.25	9.0	—
		8.0-16.0	1.2	0.20	30	3.25	6.0	—
WRD-475D24	R171S	4.75 – 11.0	1.10	0.15	30	4.25	9.0	—
DR-19	R179S	4.75 – 11.0	1.10	0.15	30	4.25	9.0	—
WRD-350D24	R172S	3.5 – 8.2	1.10	0.15	30	5.5	13.0	—
WRD-200D24	R173S	2.0 – 4.8	1.10	0.10	30	12.0	18.0	—
<b>DOUBLE-RIDGE FLEXIBLE-TWISTABLE WAVEGUIDE WITH JACKET</b>								
WRD-750D24	R170FT	7.5 – 18.0	1.20	0.35	15	3.5	6.5	90
WRD-650D28	R177FT	6.5 – 18.0	1.20	0.35	15	3.5	6.5	90
WRD-580D28	R178FT	5.8-14.5	1.3	0.30	30	4.5	10.0	60
		8.0-16.0	1.2	0.20	30	3.5	6.5	90
WRD-475D24	R171FT	4.75 – 11.0	1.15	0.25	15	4.5	10.0	60
DR-19	R179FT	4.75 – 11.0	1.15	0.25	15	4.5	10.0	60
WRD-350D24	R172FT	3.5 – 8.2	1.15	0.25	15	6.0	14.0	45
WRD-200D24	R173FT	2.0 – 4.8	1.15	0.15	10	12.0	18.0	35

‡ For units requiring higher pressures, please contact MEC,  
† Unless requested, units are supplied without jacket.

**ORDERING INFORMATION**

To order, use the MEC part numbering system illustrated below.

R177FT – 18 – C1 – G3 – N

WAVEGUIDE		LENGTH IN INCHES (± 1/8" FT)	FLANGE		MOUNTING		JACKET	
SIZE	CODE		TYPE +	CODE	HOLES	CODE	MATERIAL *	CODE
WRD-650D28	R177FT	INSERT LENGTH DESIRED	COVER	C	ALT. TAP & CLEAR	1	NEOPREN PER MIL-STD-417, CLASS SB	N
			GASKET	G	ALL TAPPED	2		
					ALL CLEAR	3		
					CAPTIVE	4		
			HELICOILED	5				

+ Aluminum flanges with chromate conversion per MIL-C-5541, Class 3  
see MEC Data Sheet T22B for dimensions

- Standard jacket supplied is neoprene for FT, Silicone for Seamless.

