

**Sure-Flex Plus 4-Way flexing action  
absorbs all types of shock, vibration and  
misalignment**



**Torsional**

Sure-Flex Plus coupling sleeves have an exceptional ability to absorb torsional shock and dampen torsional vibrations. The EPDM and Neoprene sleeves wind up approximately 21° torsionally at their rated torque. Hytrel sleeves wind up approximately 7°.



**Angular**

The unique design of the Sure-Flex Plus coupling's teeth allows for the absorption of angular misalignment without wear. Refer to page 17 for misalignment limits. Angular alignment can be achieved using only a scale and calipers.



**Parallel**

Parallel misalignment is absorbed without wear or appreciable energy loss. The lateral flexibility of the coupling sleeve minimizes radial bearing loads normally associated with parallel misalignment. This feature also allows for easier installation by the use of components bored for slip fits without fretting corrosion occurring at the shaft. Refer to page 17 for parallel misalignment limits. Only a straight-edge and feeler gage are required for parallel alignment.



**Axial**

Sure-Flex Plus couplings may be used in applications with limited axial shaft movements. The axial compressibility of the EPDM and Neoprene sleeves allows for shaft end-float without the absolute transfer of thrust loads.

**Table of Contents**

Selection Guide	3-7
Components	3
Sleeve Selection	4
Assembly Dimensions	5
Load/Service Factor	6
Coupling Ratings	7
Type S BTS Couplings	8-9
Type J BTS Couplings	10
Type B QD Bushed Couplings	11
Type SC BTS Spacer Couplings	12-15
Type C Clamp Hub Couplings	16
Installation Instructions	17

**Metric Version Catalog**

For Imperial information  
see Catalog P-1690-TBW

**Sure-Flex Plus Selection Guide**

Use the Coupling Selector Program on [www.TBWoods.com/Select](http://www.TBWoods.com/Select)  
Or follow these steps:

**Sure-Flex Plus couplings are selected as component parts.**

1. Determine SLEEVE material and type.  
Refer to pages 4 & 5
2. Determine coupling SIZE.  
Refer to pages 6 & 7
3. Determine FLANGES to be used.  
Refer to pages 8 thru 16

**Specify coupling components.**

- Example #1 - Close coupled  
Size 6, Type S flange w 35 mm bore  
Size 6, Type S flange w 25 mm bore  
Size 6, Split EPDM sleeve
- Example #2 - 5" Between shaft spacer  
Size 9, Type SC flange for #11 hub  
Size 9, Type SC flange for #9 hub  
Size 11 Hub w 2-3/8" bore  
Size 9 Short hub w 1-1/8" bore  
Size 9 Solid Hytrel sleeve

Product Number	Product Description
6S35MM	6S x 35 mm
6S25MM	6S x 25 mm
6JS	6JES
9SC5011	9SC50-11
9SC50	9SC50
11SCH238	11SCH x 2-3/8
9SCHS118	9SCHS x 1-1/8
9H	9H

# Selection Guide

## Sleeve Selection

Sure-Flex Plus Sleeves are available in four materials or compounds and various shape configurations.

**New Sure-Flex Plus EPDM and Neoprene sleeves have 30% higher torque capacity. See page 2 for details.**

	EPDM	Neoprene	Hytrel	Urethane
Constructions Available				
1 pc, unsplit	JE	JN	H	U
1 pc, split	JES	JNS	—	—
2 piece, E/N with ring	E	N	HS	—
Typical Use	General Purpose	Oil Resistant Non-Flame	General Purpose	Stiffness
Relative Rating	1X	1X	3X	3X
Wind-Up Angular	21°	21°	7°	3°
Misalign	1°	1°	1/4°	1/4°
Temperature (C)				
maximum	+135° C	+93° C	+121° C	+93° C
minimum	-34° C	-18° C	-54° C	-62° C

## Sure-Flex Plus Sleeves

Part Number	Description	Part Number	Description	Part Number	Description
3J	3JE EPDM	4	4E EPDM	6H	6H Hytrel
4J	4JE EPDM	5	5E EPDM	7H	7H Hytrel
5J	5JE EPDM	6	6E EPDM	8H	8H Hytrel
6J	6JE EPDM	7	7E EPDM	9H	9H Hytrel
7J	7JE EPDM	8	8E EPDM	10H	10H Hytrel
8J	8JE EPDM	9	9E EPDM	11H	11H Hytrel
9J	9JE EPDM	10	10E EPDM	12H	12H Hytrel
10J	10JE EPDM	11	11E EPDM	6HS	6HS Split Hytrel
3JS	3JES EPDM Split	12	12E EPDM	7HS	7HS Split Hytrel
4JS	4JES EPDM Split	13	13E EPDM	8HS	8HS Split Hytrel
5JS	5JES EPDM Split	14	14E EPDM	9HS	9HS Split Hytrel
6JS	6JES EPDM Split	16	16E EPDM	10HS	10HS Split Hytrel
7JS	7JES EPDM Split	4N	4N Neoprene	11HS	11HS Split Hytrel
8JS	8JES EPDM Split	5N	5N Neoprene	12HS	12HS Split Hytrel
9JS	9JES EPDM Split	6N	6N Neoprene	13HS	13HS Split Hytrel
10JS	10JES EPDM Split	7N	7N Neoprene	14HS	14HS Split Hytrel
3JN	3JN Neoprene	8N	8N Neoprene	10U	10U Urethane
4JN	4JN Neoprene	9N	9N Neoprene	11U	11U Urethane
5JN	5JN Neoprene	10N	10N Neoprene	12U	12U Urethane
6JN	6JN Neoprene	11N	11N Neoprene		
7JN	7JN Neoprene	12N	12N Neoprene		
8JN	8JN Neoprene	13N	13N Neoprene		
3JNS	3JNS Neoprene Split	14N	14N Neoprene		
4JNS	4JNS Neoprene Split				
5JNS	5JNS Neoprene Split				
6JNS	6JNS Neoprene Split				
7JNS	7JNS Neoprene Split				
8JNS	8JNS Neoprene Split				

# Selection Guide

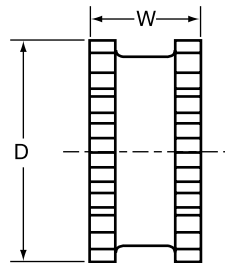
## Assembly Dimensions

All dimensions in mm

Flexible sleeves for Wood's Sure-Flex Plus couplings are available in four materials (EPDM, Neoprene, Hytrel and Urethane) and in three basic constructions. Characteristics of the materials are given on page 4 and the various types are shown and described here.



JE, JN



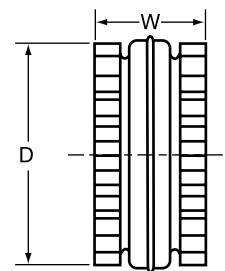
Types JES, JNS

### JE-JES-JN-JNS

J sleeves are molded EPDM rubber (E) or Neoprene (N). They are available in one-piece solid construction (JE, JN) or one-piece split construction (JES, JNS). These sleeves may be used in any Sure-Flex Plus flange within a given size.



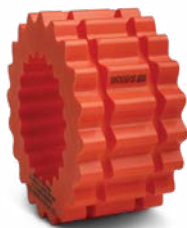
E and N  
(Assembled)



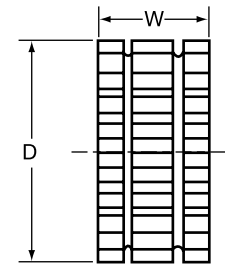
Types E and N  
(Disassembled)

### E-N

These sleeves are of two-piece design with a retaining ring. They are available in either EPDM (E) or Neoprene (N). They may be used with any flange within a given size. Sleeves are shown here assembled and disassembled.



H or U



HS

### H-HS-U

H (Hytrel) and U (Urethane) sleeves, designed for high-torque applications, transmit four times as much power as an equivalent EPDM or Neoprene sleeve. Available in one-piece solid construction (H or U) or two-piece split construction (HS), these can be used only with S, C and SC flanges. They cannot be used with J or B flanges or as direct replacements for EPDM or Neoprene sleeves.

## Dimensions (mm)

Coupling Size	JE, JES, JN & JNS Sleeves EPDM & Neoprene			E and N Sleeves EPDM & Neoprene			H, U & HS Sleeves Hytrel & Urethane		
	D	W	Wt. kg	D	W	Wt. kg	D	W	Wt. kg
3	48	25	0.03	...	...	...	...	...	...
4	59	32	0.05	59	32	0.05	...	...	...
5	75	40	0.09	75	40	0.11	...	...	...
6	95	48	0.18	95	48	0.22	95	47	0.20
7	110	55	0.28	110	55	0.35	110	55	0.31
8	129	64	0.51	129	64	0.64	129	64	0.64
9*	152	76	0.66	152	76	0.95	152	76	0.82
10*	179	87	1.0	179	87	1.4	179	87	1.3
11	...	...	...	208	102	2.3	208	102	2.0
12	...	...	...	243	119	3.7	243	119	3.3
13	...	...	...	284	138	5.9	284	138	5.4
14	...	...	...	333	165	9.6	333	165	19
16	...	...	...	455	222	21	...	...	...

Size 13 and 14 Hytrel available as HS sleeves only.

\*All 9J and 10J sleeves available in EPDM only.

Only sizes available in Urethane.

# Selection Guide

## 1. Select Load Symbol based on your driven machine.

Application	Load Symbol	Application	Load Symbol	Application	Load Symbol
AGITATORS—Paddle, Propeller, Screw . . . . .	L	DEWATERING SCREEN (sewage) . . . . .	M	MILLS	
BAND RESAW (lumber) . . . . .	M	DISC FEEDER . . . . .	L	Ball, Pebble, Rod, Tube, Rubber Tumbling .H	
BARGE HAUL PULLER . . . . .	H	DOUGH MIXER . . . . .	M	Dryer and Cooler . . . . .	M
BARKING (lumber) . . . . .	H	DRAW BENCH CONVEYOR and		MIXERS	
BAR SCREEN (sewage) . . . . .	L	MAIN DRIVE . . . . .	H	Concrete, Muller . . . . .	M
BATCHES (textile) . . . . .	L	DREDGES		Banbury . . . . .	H
BEATER AND PULPER (paper) . . . . .	M	Cable Reel, Pumps . . . . .	M	ORE CRUSHER . . . . .	H
BENDING ROLL (metal) . . . . .	M	Cutter Head Drive, Jig Drive, Screen Drive .H		OVEN CONVEYOR . . . . .	L
BLEACHER (paper) . . . . .	L	Maneuvering and Utility Winch, Stacker . .M		PLANER (metal or wood) . . . . .	M
BLOWERS		DYNAMOMETER . . . . .	L	PRESSES	
Centrifugal, Vane . . . . .	L	DRYERS (rotary) . . . . .	M	Brick, Briquette Machine . . . . .	H
Lobe . . . . .	M	EDGER (lumber) . . . . .	H	Notching, Paper, Punch, Printing . . . . .	M
BOTTLING MACHINERY . . . . .	L	ELEVATOR		PUG MILL . . . . .	M
BREW KETTLES (distilling) . . . . .	L	Bucket . . . . .	M	PULP GRINDER (paper) . . . . .	H
BUCKET ELEVATOR OR CONVEYOR . . . . .	M	Escalator . . . . .	L	PULVERIZERS	
CALENDERS		Freight, Passenger, Service, Man Lift . . .H		Hammermill—light duty, Roller . . . . .	M
Calender (paper) . . . . .	M	ESCALATORS . . . . .	L	Hammermill—heavy duty, Hog . . . . .	H
Calender-super (paper), Calender (rubber) .H		EXTRUDER (metal) . . . . .	H	PUMPS	
CANE KNIVES (sugar) . . . . .	M	FANS		Centrifugal, Axial . . . . .	L
CARD MACHINE (textile) . . . . .	H	Centrifugal . . . . .	L	Gear, Lobe, Screw, Vane . . . . .	M
CAR DUMPERS . . . . .	H	Cooling Tower . . . . .	H	Reciprocating—sgl. or dbl. acting,	
CAR PULLERS . . . . .	M	Forced Draft, Large Industrial or Mine . . .M		cylinder . . . . .	*
CEMENT KILN . . . . .	H	FEEDERS		REEL, REWINDER (paper) CABLE . . . . .	M
CENTRIFUGAL EQUIPMENT		Apron, Belt, Disc . . . . .	L	ROD MILL . . . . .	H
Blowers, Compressors, Fans, Pumps . . . .L		Reciprocating . . . . .	H	SAWDUST CONVEYOR . . . . .	L
CHEMICAL FEEDERS (sewage) . . . . .	L	Screw . . . . .	M	SCREENS	
CHILLER (oil) . . . . .	M	FILTER, PRESS-OIL . . . . .	M	Air Washing, Water . . . . .	L
CHIPPER (paper) . . . . .	H	GENERATORS		Rotary for coal or sand . . . . .	M
CIRCULAR RESAW (lumber) . . . . .	M	Uniform load . . . . .	L	Vibrating . . . . .	H
CLARIFIER or CLASSIFIER . . . . .	L	Varying load, Hoist . . . . .	M	SCREW CONVEYOR . . . . .	L
CLAY WORKING MACHINERY . . . . .	M	Welders . . . . .	H	SLAB CONVEYOR (lumber) . . . . .	M
COLLECTORS (sewage) . . . . .	L	GRIT COLLECTOR (sewage) . . . . .	L	SLITTERS (metal) . . . . .	M
COMPRESSORS		GRIZZLY . . . . .	H	SOAPERS (textile) . . . . .	L
Centrifugal, Gear, Lobe, Screw . . . . .	L	HAMMERMILL		SORTING TABLE (lumber) . . . . .	M
Reciprocating . . . . .	*	Light Duty, Intermittent . . . . .	M	SPINNER (textile) . . . . .	M
CONCRETE MIXERS . . . . .	M	Heavy Duty, Continuous . . . . .	H	STOKER . . . . .	L
CONVERTING MACHINE (paper) . . . . .	M	HOISTS		SUCTION ROLL (paper) . . . . .	M
CONVEYORS		Heavy Duty . . . . .	H	TENTER FRAMES (textile) . . . . .	M
Apron, Assembly Belt, Flight, Oven, Screw .L		Medium Duty . . . . .	M	TIRE BUILDING MACHINES . . . . .	H
Bucket . . . . .	M	JORDAN (paper) . . . . .	H	TIRE & TUBE PRESS OPENER . . . . .	L
COOKERS—Brewing, Distilling, Food . . . .L		KILN, ROTARY . . . . .	H	TUMBLING BARRELS . . . . .	H
COOLING TOWER FANS . . . . .	H	LAUNDRY WASHER or TUMBLER . . . . .	H	WASHER and THICKENER (paper) . . . . .	M
COUCH (paper) . . . . .	M	LINE SHAFTS . . . . .	L	WINCHES . . . . .	M
CRANES and HOISTS . . . . .	M	LOG HAUL (lumber) . . . . .	H	WINDERS, Paper, Textile, Wire . . . . .	M
Heavy Duty Mine . . . . .	H	LOOM (textile) . . . . .	M	WINDLASS . . . . .	M
CRUSHERS—Cane (sugar), Stone or Ore . . .H		MACHINE TOOLS, MAIN DRIVE . . . . .	M	WIRE	
CUTTER—Paper . . . . .	H	MANGLE (textile) . . . . .	L	Drawing . . . . .	H
CYLINDER (paper) . . . . .	H	MASH TUBS (distilling) . . . . .	L	Winding . . . . .	M
		MEAT GRINDER . . . . .	M	WOODWORKING MACHINERY . . . . .	L
		METAL FORMING MACHINES . . . . .	M		

\*Consult Factory

## 2. Determine Service Factor using Load Symbol and Driver

Load Symbol	L Light	M Medium	H Heavy
Standard AC Motor			
DC Shunt Motor	1.25	1.5	2.0
*Engine, 8 or more cylinders			
High Torque AC Motor			
DC Series & Comp.	1.5	2.0	2.5
*Engine, 4-6 cylinders			
*Engine, 3 cylinders or less	2.0	2.5	3.0
Turbine	1.0	1.25	1.5

\* On applications involving varying torque loads, design around the maximum load. Then determine the resulting service factor at minimum load. If this value is greater than 5.2 for EPDM or Neoprene sleeves, or 4.0 for Hytel sleeves, special coupling alignment will be required (see page 17).

**Caution:** Applications involving reciprocating engines and reciprocating driven devices are subject to rotational vibrational critical speeds which may destroy the coupling. Consult factory.

### 3. Determine Size using Coupling Rating Tables

Use the following formula to calculate the required coupling kilowatt rating @ 100 RPM.  
 $KW @ 100 \text{ RPM} = KW \times \text{Service Factor} \times 100 / \text{coupling RPM}$

Use the chart below to find a coupling with a KW @ 100 RPM rating which is greater than calculated above.

Example: For 4 KW @ 55 RPM, 1.25 Service Factor:  
 $KW @ 100 = 4 \times 1.25 \times 100 / 55 = 9.09$   
 Use #12 EPDM or Neoprene, or #10 Hytrel.

Note: Do not exceed a 5.2 Service Factor for EPDM or Neoprene sleeves, or 4.0 for Hytrel sleeves.

#### Online Selection Tools

Coupling selection program, 3-D CAD models, e-catalog and interchange guide make selecting the right coupling simple!  
[www.TBWoods.com/Couplings](http://www.TBWoods.com/Couplings)

**New! Sure-Flex Plus EPDM and Neoprene sleeves have a 30% higher torque capacity.**

#### Coupling Ratings (Metric)

Size	EPDM Sleeve	Neoprene Sleeve	KW @ RPM				Torque (Nm)	Stiffness (Nm/rad)	Max RPM
			100	970	1450	3000			
3	JE,JES	JN,JNS	0.09	0.90	1.3	2.8	8.8	26	9200
4	E,JE,JES	N,JN,JNS	0.18	1.8	2.7	5.5	18	52	7600
5	E,JE,JES	N,JN,JNS	0.37	3.6	5.4	11	35	104	7600
6	E,JE,JES	N,JN,JNS	0.69	6.7	10	21	66	194	6000
7	E,JE,JES	N,JN,JNS	1.1	11	16	33	107	313	5250
8	E,JE,JES	N,JN,JNS	1.8	17	25	52	167	490	4500
9	E,JE,JES	N	2.8	27	40	83	264	777	3750
10	E,JE,JES	N	4.4	43	64	133	422	1241	3600
11	E	N	7.0	68	101	209	666	1955	3600
12	E	N	11	107	161	332	1058	3107	2800
13	E	N	17	169	253	524	1667	4898	2400
14	E	N	28	269	402	831	2644	7768	2200
16	E	-	56	542	811	1677	5338	20392	1500

Size	Hytrel Sleeve	Urethane Sleeve	KW @ RPM				Torque (Nm)	Stiffness (Nm/rad)	Max RPM
			100	970	1450	3000			
6	H, HS		2.1	21	31	64	203	1130	6000
7	H, HS		3.4	33	49	102	325	2260	5250
8	H, HS		5.4	52	78	161	512	3390	4500
9	H, HS		8.5	83	124	256	814	5367	3750
10	H, HS	U	13	130	195	403	1282	11299*	3600
11	H, HS	U	21	207	309	639	2034	14123*	3600
12	H, HS	U	37	362	540	1118	3559	25422*	2800
13	HS		56	542	811	1678	5341	41680	2400
14	HS		86	832	1243	2573	8189	67028	2200

\* Urethane values are 220000, 350000, and 600000.