

90°

WELLMAN

Taper Grid
Resilient
Couplings



WELLMAN WACOMA LIMITED

90°

INDEX

	Page
General Features of Coupling Type - TA & TC	1
Efficiency Chart	1
Table A - Typical Service Factor	2
Table B - Transmitted kW x Service Factor Chart	2
Table C - Coupling Selection Based on Equivalent kW Rating	3
Selection Procedure	3
Recommended Matching Fits Between Hubs & Shafts	3
G.A. Drawing of Vertically Split Cover Coupling Type-TA	4
Table D - Dimension of Coupling Type-TA	4
Table E - Equivalent Falk Coupling Chart	4
G.A. Drawing of Horizontally Split Cover Coupling Type-TC	5
Table F - Dimension of Coupling Type-TC	5
Table G - Equivalent Falk Coupling Chart	5



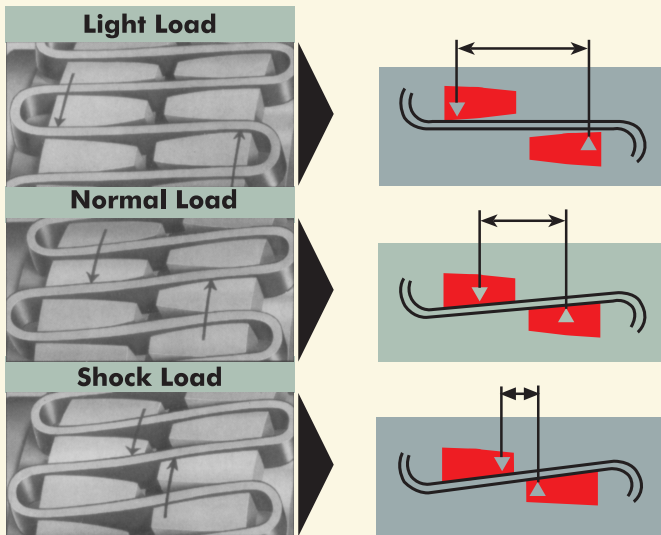
Wellman Taper Grid Resilient Couplings

A HIGHLY ACCLAIMED PRODUCT

Wellman Resilient Coupling is recognised and accepted by engineers in most of the drive systems, as one of the most effective shock absorbing and de-tuning coupling.

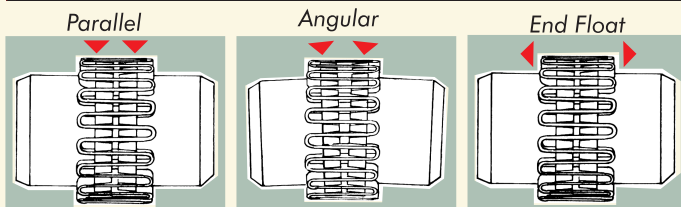
Wellman Taper Grid Resilient Coupling is made of specially rolled high tensile taper section alloy spring steel material with technical care in shape formation, followed by hardening and tempering, through controlled process. Unique design of hub teeth profile facilitates the taper grid to insert gently into the taper grooves on the hub periphery during installation and maintenance and gives long life in transmitting progressive load under torsional shock condition.

CARE AGAINST DAMAGING EFFECTS OF IMPACT LOADS, SHOCK LOADS & VIBRATION



The Taper Grid Coupling is torsionally flexible. The peripheral flexibility is progressive due to the curved tooth profile design of the resilient coupling.

ACCOMMODATION OF SHAFT MISALIGNMENT & END-FLOAT

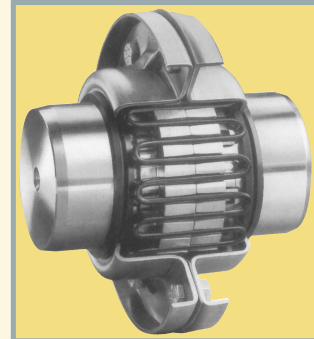


The Coupling accommodates parallel, angular and endfloat misalignments of drive system causing machine settlement, displacement etc.

Type TA

FEATURES

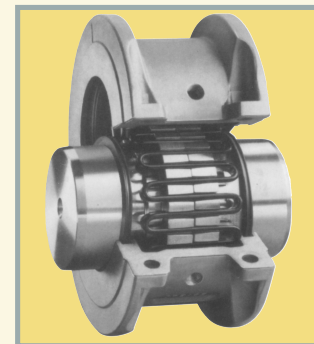
- All Steel
- Vertically Split
- Cover
- General purpose
- Heavy Duty
- Ideal for higher R.P.M.



Type TC

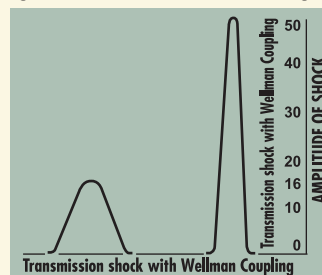
FEATURES

- Durable Aluminium
- Horizontally Split Cover
- General purpose
- Less downtime in Grid Spring maintenance
- Ideal for limited shaft space in drive system



EFFICIENCY IN TORSIONAL DAMPINGS

The Taper Grid Coupling transmits drive torque, the grid rung's flexibility detunes vibrations and absorbs shock loads. Torsional flexibility of the coupling is proportional to the unsupported length of the individual flexible grid rung.



As it varies with each variation of torque, there develops a heavy de-tuning action by which the normal frequency of the system alters continuously and hence prevents resonance developed in the system. The resultant reduction in peak loading protects the transmission equipment and adds long life to it.

SERVICE FACTORS FOR WELLMAN TAPER GRID RESILIENT COUPLINGS (Refer to Note 3)

The service factors given here are for general guideline and are complementary to customers knowledge of their own equipment. For substantial frequent shocks occur on starting and stopping machinery, reversing drives and for high peak torque applications, use the Selection Procedure as described on Page 3.

For applications which are not listed or for exceptional duties, consult your supplier or Wellman.





Wellman Taper Grid Resilient Couplings

TABLE A

SERVICE FACTORS

Application	Service Factor	Application	Service Factor	Application	Service Factor	Application	Service Factor
AGITATORS1.0		FOOD		PAPER MILLS		Door opener.....2.0	
BLOWERS		Beet Slicer.....1.75		Bleacher.....1.0		Pusher and Lorry car traction drive.....3.0	
Centrifugal.....1.0		Cereal cooker.....1.25		Felt stretcher.....1.25		Cold mills-Strip and temper mills.....2.0	
Lobe/Vane.....1.25		Dough mixer.....1.75		Stock chest/stock pump-rotary/winder.....1.5		Hot mills-Strip and sheet mills.....3.0	
CLAY WORKING MACHINES		Meat grinder.....1.75		Bleater and pulper/Calender/Couch/ dryer/Fourdrinier/Press/Pulp grinder/ Suction roll.....1.75		Reversing, blooming or slabbing mills	
Brick Press, Pug mill, Briquette Machine.....1.75		Bottling, can filling.....1.00		Jordan/Stock pump-reciprocating.....2.0		REFER TO WELLMAN	
COMPRESSORS		GENERATORS		Barking drum/Chipper.....2.5		REFER TO WELLMAN	
Centrifugal.....1.0		Even Load.....1.0		PLASTIC		Edging mills	
Lobe/Rotary.....1.25		Hoist and Railway service.....1.5		Calenders/Crushers/Extruders/Mixers.....1.5		REFER TO WELLMAN	
Reciprocating		Welder load.....2.0		PULVERISERS		Cooling beds.....1.5	
1 to 3 cylinders.....3.0		KILN2.0		Roller/Hammer mill, light duty.....1.5		Wire drawing/Slitters, steel mills only.....1.75	
4 or more cylinders.....1.75		LAUNDRY MACHINES2.0		Hog/Hammer mill, heavy duty.....1.75		Drawbench/Furnace pusher/hot and cold saws/Ingot cars/Reelers/Straighteners.....2.0	
CONVEYORS		MACHINE TOOLS		PUMPS		Seamless tube mills piercer/Rod mills/ mill tables/Manipulators/ Feed rolls-blooming mills.....3.0	
Uniformly fed horizontal		Presses.....1.5		Centrifugal.....1.0		SUGAR INDUSTRY	
Screw, Apron, Assembly, Belt,		Notching press/Planer/Punch.....1.75		Descaling with accumulators/ Rotary gear, Lobe and Vane.....1.25		Cane carrier and leveller.....1.75	
Chain, Flight, Oven.....1.0		Auxiliary and traverse drives.....2.0		Reciprocating		Cane knife and crusher.....2.0	
Heavy duty		METAL WORKING		1. Cylinder, single or double acting.....3.0		Mill stands Turbine driven-Helical or Herringbone gears.....1.5	
Dredge, Inclined belt and screw.....1.5		Hammers.....2.0		2. Cylinder, single acting.....2.0		Electric drive or steam driven with all Helical or Herringbone or spur gears with any prime mover.....1.75	
Reciprocating.....3.0		Straighteners.....2.0		3. Cylinder or more.....1.5		TEXTILES	
CRANES AND HOISTS		Bending.....1.5		RUBBER INDUSTRY		Batcher.....1.25	
Main hoist-medium duty/mine haulage.....2.5		Shears.....1.5		Extruder.....1.75		Dyeing machinery.....1.25	
Main hoist-heavy duty.....3.0		Punching.....2.0		Calendar.....2.0		Calender/Card machine/Dry can/Loom.....1.5	
Long or cross travel/Stew or luff		MILLS (Rotary type)		Banbury mixer/Cracker/ Mixing mill/Plasticator/Refiner.....2.5		TOBACCO AND CIGARETTE MACHINERY1.5	
Skip hoist/slope.....1.75		Ball or Pebble.....2.0		STEEL INDUSTRY		WATER AND WASTE TREATMENT	
CRUSHERS2.5		Rod or tube.....2.0		Soaking Pit/Cover drive		Aerators.....1.5	
DREDGERS2.0		Dryer and cooler.....1.75		Lift.....1.0		Screw pumps.....1.5	
ELEVATORS		MIXERS		Travel.....2.0		Screens.....1.5	
Centrifugal and gravity discharge.....1.25		Drum.....1.5		Coilers (up or down) cold mills only.....1.5		WIND TURBINES1.25	
FANS		Concrete (continuous or intermittent).....1.75		Coilers (up or down) Hot mills only.....2.0		WOOD WORKING MACHINERY	
Centrifugal.....1.0		Grizzly.....2.0		Coke plants :		Trimmers, haulage, barkers, planes, saws.....2.0	
Forced draught.....1.5		OIL INDUSTRY		Pusher ram drive.....2.5			
Induced draught with damper.....1.5		Oil well pumping					
Mine/Cooling tower.....2.0		(<than 150% peak torque).....2.0					
Induced draught without control.....2.0							

NOTE :

- Limited End Float Couplings can be supplied to protect sleeve and straight roller bearings.
- If people are occasionally transported, refer to your supplier or Wellman for selection of correct Coupling size.
- For high Peak Torque applications, use the Selection Procedure as described on page 3.

TABLE A1

Reciprocating Engine Service Factor Adders

For engine drives where good flywheel regulation prevents excessive torque fluctuations.

Number of Cylinders	Engine Service Factor
6 and over	0.5
4 or 5	1.0
Less than 4	Refer to Wellman

For drives where the operation is near or actually passes through a major torsional natural frequency, a mass elastic analysis of the system is advised. When the Service Factor in Table A is greater than 2.0 consult Wellman.

TABLE B

Equivalent kW = Transmitted kW x Service Factor

Service Factor	Transmitted kW														
	0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.5	10.0	12.0	15.0	20.0	25.0	30.0	
1.00	0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.5	10.0	12.0	15.0	20.0	25.0	30.0	
1.25	0.6	1.3	1.9	2.5	3.8	5.0	6.3	9.4	12.5	15.0	18.8	25.0	31.3	37.5	
1.50	0.8	1.5	2.3	3.0	4.5	6.0	7.5	11.3	15.0	18.0	22.5	30.0	37.5	45.0	
1.75	0.9	1.8	2.6	3.5	5.3	7.0	8.8	13.1	17.5	21.0	26.3	35.0	43.8	52.5	
2.00	1.0	2.0	3.0	4.0	6.0	8.0	10.0	15.0	20.0	24.0	30.0	40.0	50.0	60.0	
2.50	1.3	2.5	3.8	5.0	7.5	10.0	12.5	18.8	25.0	30.0	37.5	50.0	62.5	75.0	
3.00	1.5	3.0	4.5	6.0	9.0	12.0	15.0	22.5	30.0	36.0	45.0	60.0	75.0	90.0	
3.50	1.8	3.5	5.3	7.0	10.5	14.0	17.5	26.3	35.0	42.0	52.5	70.0	87.5	105.0	
Service Factor	Transmitted kW														
	40.0	50.0	60.0	75.0	100.0	125.0	150.0	200.0	250.0	300.0	350.0	400.0	450.0	500.0	
1.00	40.0	50.0	60.0	75.0	100.0	125.0	150.0	200.0	250.0	300.0	350.0	400.0	450.0	500.0	
1.25	50.0	62.5	75.0	93.8	125.0	156.3	187.5	250.0	312.5	375.0	437.5	500.0	562.5	625.0	
1.50	60.0	75.0	90.0	112.5	150.0	187.5	225.0	300.0	375.0	450.0	525.0	600.0	675.0	750.0	
1.75	70.0	87.5	105.0	131.3	175.0	218.8	262.5	350.0	437.5	525.0	612.5	700.0	787.5	875.0	
2.00	80.0	100.0	120.0	150.0	200.0	250.0	300.0	400.0	500.0	600.0	700.0	800.0	900.0	1000.0	
2.50	100.0	125.0	150.0	187.5	250.0	312.5	375.0	500.0	625.0	750.0	875.0	1000.0	1125.0	1250.0	
3.00	120.0	150.0	180.0	225.0	300.0	375.0	450.0	600.0	750.0	900.0	1050.0	1200.0	1350.0	1500.0	
3.50	140.0	175.0	210.0	262.5	350.0	437.5	525.0	700.0	875.0	1050.0	1225.0	1400.0	1575.0	1750.0	



Wellman Taper Grid Resilient Couplings

TABLE C

Coupling Selection - Based on Equivalent Kilowatt Rating

RPM	Coupling Sizes - Types TA & TC												
	20	30	40	50	60	70	80	90	100	110	120	130	140
3550.0	17.7	50.3	84.0	147.0	231.0	336.0	694.0	1261.0					
2900.0	14.5	41.1	68.6	120.0	189.0	275.0	567.0	1030.0	1731.0	2574.0			
1750.0	8.7	24.8	41.4	72.6	114.0	166.0	342.0	621.0	1044.0	1554.0	2285.0	3316.0	4765.0
1450.0	7.2	20.6	34.3	60.1	94.4	137.0	283.0	515.0	865.0	1287.0	1893.0	2748.0	3948.0
1170.0	5.8	16.6	27.7	48.5	76.2	111.0	229.0	415.0	698.0	1039.0	1527.0	2217.0	3186.0
1000.0	5.0	14.2	23.6	41.5	65.1	94.7	195.0	355.0	597.0	888.0	1306.0	1895.0	2723.0
870.0	4.3	12.3	20.6	36.1	56.7	82.4	170.0	309.0	519.0	772.0	1136.0	1649.0	2369.0
720.0	3.6	10.2	17.0	29.9	46.9	68.2	141.0	256.0	430.0	639.0	940.0	1364.0	1960.0
650.0	3.2	9.2	15.4	27.0	42.3	61.6	127.0	231.0	388.0	577.0	849.0	1232.0	1770.0
580.0	2.9	8.2	13.7	24.1	37.8	55.0	113.0	206.0	346.0	515.0	757.0	1099.0	1579.0
520.0	2.6	7.4	12.3	21.6	33.9	49.3	102.0	185.0	310.0	462.0	679.0	985.0	1416.0
420.0	2.1	6.0	9.9	17.4	27.4	39.8	82.1	149.0	251.0	373.0	548.0	796.0	1144.0
350.0	1.7	5.0	8.3	14.5	22.8	33.2	68.4	124.0	209.0	311.0	457.0	663.0	953.0
280.0	1.4	4.0	6.6	11.6	18.2	26.5	54.7	99.4	167.0	249.0	366.0	531.0	762.0
230.0	1.1	3.3	5.4	9.5	15.0	21.8	45.0	81.7	137.0	204.0	300.0	436.0	626.0
190.0	1.0	2.7	4.5	7.9	12.4	18.0	37.1	67.5	113.0	169.0	248.0	360.0	517.0
155.0	0.8	2.2	3.7	6.4	10.1	14.7	30.3	55.0	92.5	138.0	202.0	294.0	422.0
125.0	0.6	1.8	3.0	5.2	8.1	11.8	24.4	44.4	74.6	111.0	163.0	237.0	340.0
100.0	0.5	1.4	2.4	4.1	6.5	9.5	21.5	35.5	59.7	88.8	131.0	189.0	272.0
84.0		1.2	2.0	3.5	5.5	8.0	16.4	29.8	50.1	74.6	110.0	159.0	229.0
68.0		1.0	1.6	2.8	4.4	6.4	13.3	24.1	40.6	60.4	88.8	129.0	185.0
56.0		0.8	1.3	2.3	3.6	5.3	10.9	19.9	33.4	49.7	73.1	106.0	152.0
45.0		0.6	1.1	1.9	2.9	4.3	8.8	16.0	26.9	39.9	58.7	85.3	123.0
37.0		0.5	0.9	1.5	2.4	3.5	7.2	13.1	22.1	32.8	48.3	70.1	101.0
30.0			0.7	1.2	2.0	2.8	5.9	10.7	17.9	26.6	39.2	56.8	81.7
25.0			0.6	1.0	1.6	2.4	4.9	8.9	14.9	22.2	32.6	47.4	68.1
20.0				0.8	1.3	1.9	3.9	7.1	11.9	17.8	26.1	37.9	54.5
16.5				0.7	1.1	1.6	3.2	5.9	9.8	14.6	21.5	31.3	44.9
13.5				0.6	0.9	1.3	2.6	4.8	8.1	12.0	17.6	25.6	36.8
11.0					0.7	1.0	2.1	3.9	6.6	9.8	14.4	20.8	30.0
9.0					0.6	0.9	1.8	3.2	5.4	8.0	11.7	17.1	24.5
7.5						0.7	1.5	2.7	4.5	6.7	9.8	14.2	20.4

NOTE : 1. If the required speed is not shown, use the next lower listed or interpolate between those listed.
 2. If required speed is over 3500 rpm use the Formula method below.

SELECTION PROCEDURES

1. Nominal Torque (simple selection method)

A 4 Cyl. diesel engine driven generator set of 280 kW runs at 1000 rpm. Output and input shafts are identical being 90mm dia x 130mm long. A Wellman type TC, horizontally split, coupling is specified for ease of assembly.

- The service factor from Table A = 1.0 :
- Additional factor (engine) from Table A1=1.0 : Total=2.0
- From Table A1 (SF=2) : equivalent : kW=560
- From Table C coupling to transmit 560 kW@1000 rpm = 100TA/TC
- From Table F allowable speed for 100TC=2440 rpm

Max bore and overall dimensions are satisfactory.

2. Nominal Torque (formula method)

An electric motor of 300 kW is to be coupled to drive a rotary screw compressor at 1000 rpm. Motor shaft is 85mm dia x 110mm long. Compressor shaft 75mm x 100mm long. A Wellman Type TA, vertically split, coupling is required.

- From Table A service factor = 1.0 calculate torque :-
 $Nm = \text{Transmitted } kW \times SF \times (9555 / rpm) = 300 \times 1 \times (9555 / 1000) = 2867 \text{ Nm.}$
- From Table D coupling 90TA has rating in excess of required torque.
 Max rpm = 4000; Max bore 95mm; bore length 98.4mm
 make the 90TA selection satisfactory.

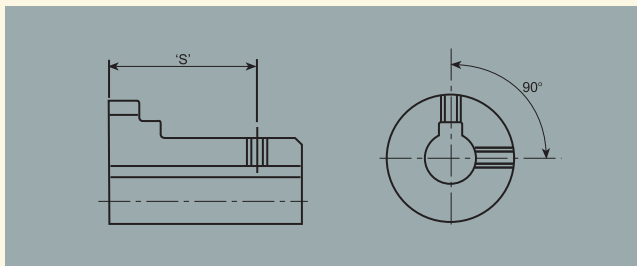
3. Peak Torque (formula method)*

An extruder drive running at 300 rpm has a known peak torque of 11000 Nm. The connected shafts are each 120mm dia x 160mm long. Select a Wellman Type TC, horizontally split, coupling to suit the known peak unidirectional torque of 11000 Nm. From Table F coupling 120TC has torque exceeding calculated peak torque. Coupling max rpm is 2025. Max bore 137mm is greater than shaft diameter. Overall length is satisfactory.

- * 1. The system peak torque is the maximum load created by the driving or driven equipment.
- 2. Occasional peak torques of twice the catalogue rating can be accommodated providing they occur less than 1000 times during the life of the coupling.

RECOMMENDED MATCHING FITS BETWEEN HUBS & SHAFTS

Hub bore tolerances for coupling sizes upto and including 90, can be specified to suit a transition fit with the shaft. The axial restraint of the hub should be provided by set screws. Relative sizes and positions are given below. For sizes above 90 or where interference fits are preferred for smaller coupling sizes, hub bore tolerances should provide an interference fit between shaft and hub of 0.0002 to 0.0007 mm per millimetre of diameter.



Coupling Size - Types TA & TC	Set Screw dia X Length (Cone Point)	Position from Hub Face 'S'
20		35
30	M5 x 5	40
40		40
50	M6 x 6	45
60		53
70		54
80	M8 x 8	65
90	M10 x 10	72





Wellman Taper Grid Resilient Couplings

VERTICALLY SPLIT COVER COUPLINGS TYPE TA

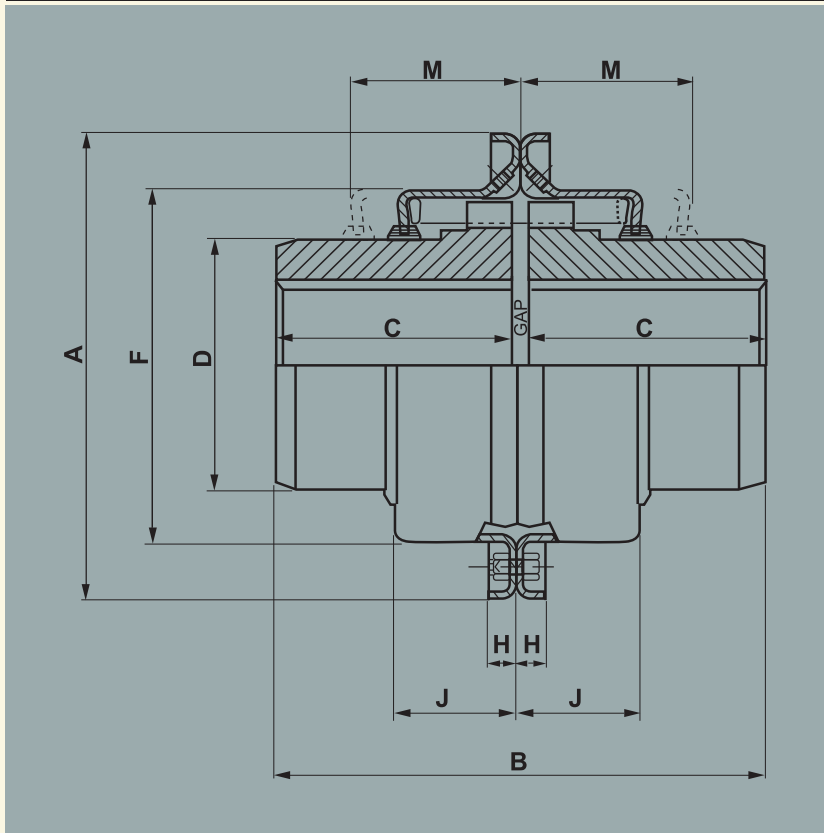


TABLE D

CPLG. SIZE	CPLG. RATING Nm	MAX RPM	MIN BORE mm	(2) MAX BORE mm	(1) CPLG. WT Kg	(1) WK2 Kgm2	A mm	B mm	C mm	D mm	F mm	H mm	J mm	M mm	GAP mm
20	48	6000	13	27	1.6	0.0011	111	98	47.5	39.7	63	9.5	24.4	48	3.2
30	136	6000	13	35	2.2	0.0018	121	98	47.5	49.2	72	9.5	25.2	48	3.2
40	226	6000	13	44	3.0	0.0027	129	105	50.8	57.2	80	9.5	26.0	51	3.2
50	395	6000	13	51	5.0	0.0063	148	124	60.3	66.7	97	13.0	31.4	61	3.2
60	621	6000	19	57	6.7	0.0100	162	130	63.5	76.2	110	13.0	32.2	64	3.2
70	904	5500	19	68	9.7	0.0160	173	156	76.4	87.3	121	13.0	33.8	67	3.2
80	1864	4750	25	83	16.6	0.0390	200	181	88.9	104.8	149	13.0	44.1	89	3.2
90	3390	4000	25	95	23.6	0.0720	232	200	98.4	123.8	168	13.0	47.3	96	3.2
100	5706	3250	42	108	39.5	0.1720	267	246	120.6	142.1	198	16.0	60.2	121	4.8
110	8474	3000	42	117	51.9	0.2610	286	259	127.0	160.4	216	16.0	63.3	124	4.8
120	12428	2700	60	137	75.8	0.5000	319	305	149.2	179.4	246	16.0	73.8	143	6.4
130	18078	2400	66	165	115.0	1.0800	378	330	161.9	217.5	284	22.0	75.4	147	6.4
140	25987	2200	66	184	173.0	1.8950	416	375	182.8	254.0	322	22.0	78.5	156	6.4

NOTE : 1. Coupling WT and WK2 with no bore
2. Max. bores stated above use rectangular parallel keyways to IS 2048 1975 or BS 4235 pt. 1 1972 or DIN 6885 sht. 1 1968.

TABLE E

CPLG. SIZE	EQUIVALENT FALK CPLG.	CPLG. SIZE	EQUIVALENT FALK CPLG.	CPLG. SIZE	EQUIVALENT FALK CPLG.
20TA	20T20 1020T20	70TA	70T20 1070T20	120TA	120T20 1120T20
30TA	30T20 1030T20	80TA	80T20 1080T20	130TA	130T20 1130T20
40TA	40T20 1040T20	90TA	90T20 1090T20	140TA	140T20 1140T20
50TA	50T20 1050T20	100TA	100T20 1100T20		
60TA	60T20 1060T20	110TA	110T20 1110T20		



Wellman Taper Grid Resilient Couplings

HORIZONTALLY SPLIT COVER COUPLINGS TYPE TC

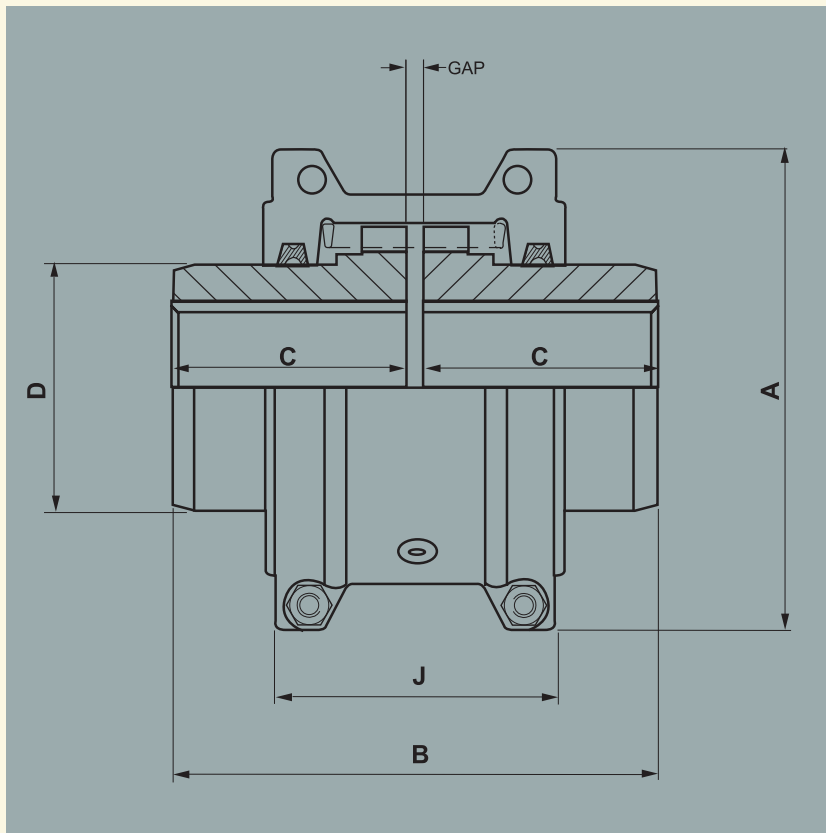


TABLE F

CPLG. SIZE	CPLG. RATING Nm	MAX RPM	MIN BORE mm	(2) MAX BORE mm	(1) CPLG. WT Kg	(1) WK2 Kgm2	A mm	B mm	C mm	D mm	J mm	GAP mm
20	48	4500	13	27	1.8	0.0014	102	98	47.5	39.7	66.7	3.2
30	136	4500	13	35	2.4	0.0022	111	98	47.5	49.2	68.3	3.2
40	226	4500	13	44	3.2	0.0033	118	105	50.8	57.2	69.9	3.2
50	395	4500	13	51	5.2	0.0073	138	124	60.3	66.7	79.4	3.2
60	621	4350	19	57	7.1	0.0119	151	130	63.5	76.2	92.0	3.2
70	904	4125	19	68	10.1	0.0185	162	156	76.4	87.3	95.3	3.2
80	1864	3600	25	83	17.7	0.0451	194	181	88.9	104.8	115.9	3.2
90	3390	3600	25	95	24.5	0.0787	213	200	98.4	123.8	122.2	3.2
100	5706	2440	42	108	41.3	0.1782	251	246	120.6	142.1	155.6	4.8
110	8474	2250	42	117	53.6	0.2701	270	259	127.0	160.4	162.6	4.8
120	12428	2025	60	137	78.7	0.5136	308	305	149.2	179.4	192.0	6.4
130	18078	1800	66	165	118.0	0.9885	347	330	161.9	217.5	195.2	6.4
140	25987	1650	66	184	176.0	1.8454	384	375	182.8	254.0	201.5	6.4

NOTE : 1. Coupling WT and WK2 with no bore.
2. Max. bores stated above use rectangular parallel keyways to IS 2048 1975 or BS 4235 pt. 1 1972 or DIN 6885 sht. 1 1968.

TABLE G

CPLG. SIZE	EQUIVALENT FALK CPLG.	CPLG. SIZE	EQUIVALENT FALK CPLG.	CPLG. SIZE	EQUIVALENT FALK CPLG.
20TC	20T10 1020T10	70TC	70T10 1070T10	120TC	120T10 1120T10
30TC	30T10 1030T10	80TC	80T10 1080T10	130TC	130T10 1130T10
40TC	40T10 1040T10	90TC	90T10 1090T10	140TC	140T10 1140T10
50TC	50T10 1050T10	100TC	100T10 1100T10		
60TC	60T10 1060T10	110TC	110T10 1110T10		

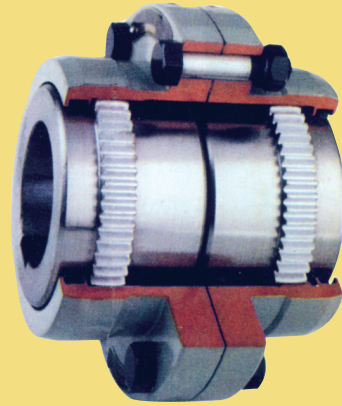


Wellman **Taper Grid Resilient Couplings**

Wellman Range of Products

Unrivalled experience, comprehensive design and manufacturing capabilities - accepted by designers, manufacturers and maintenance engineers seeking long-term reliability.

- ▶ **Gear Couplings**
- ▶ **Resilient Couplings**
- ▶ **Flexible Disc Couplings**
- ▶ **Taper Grid Resilient Couplings**
- ▶ **Torque Limiters**
- ▶ **Safety Element Torque Limiters**



WELLMAN WACOMA LIMITED

Thermal & Mechanical Power Transmission Engineers

Tivoli Park, Bunglow No. 5, 225 B, A.J.C. Bose Road, Kolkata - 700020

Tel: 91-33-2283-7389/6042, 91-33-32477552; Fax: 91-33-2283-6080

E-mail: wellmanwacoma@wellmanwacoma.com, wacoma@viascl01.vsnl.net.in

Bengaluru

No. 7/2, Main Muneshwara Temple Street, Hebbal, Kempapura, Bengaluru - 560024

Tel: 91-80-2343-0947; Fax: 91-80-2333-6196

E-mail: bangalore@wellmanwacoma.com, wellman_efrel@yahoo.co.in

Mumbai

Satyabhama Nivas, Tribhuvan Road, Mumbai - 400004

Tel: 91-22-23860887 (off); Mobile: 09821132264

E-mail: mumbai@wellmanwacoma.com, knd72@yahoo.com

Delhi

Flat No. 1218, Devika Tower, Nehru Place New Delhi - 110019

Tel: 91-11-2644-5017; Fax: 91-11-2644-5018

E-mail: delhi@wellmanwacoma.com, wellmandelhi@yahoo.com

Pune

Ambience Enterprise C-12 Roshma Residency, Vimannagar, Pune - 411014

Tel: +91- 020 - 40027204; Mobile: +91-9822833399; Fax: +91- 020 - 26630633

E-mail: pune@wellmanwacoma.com, ambience_enterprise@yahoo.co.in

Website: www.wellmanwacoma.com