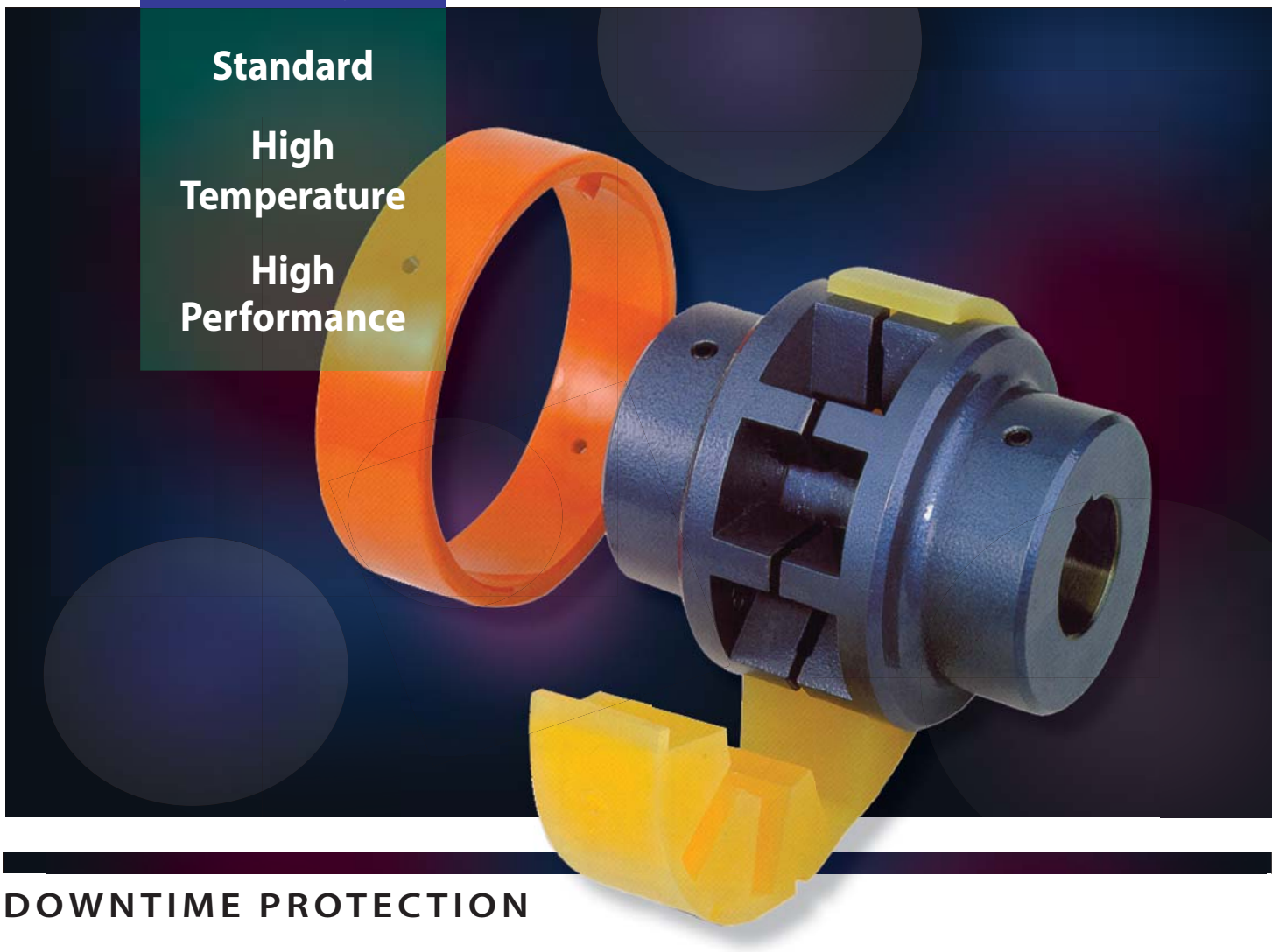
FLEX COUPLINGS

Elastic Style

Standard

High Temperature

High Performance



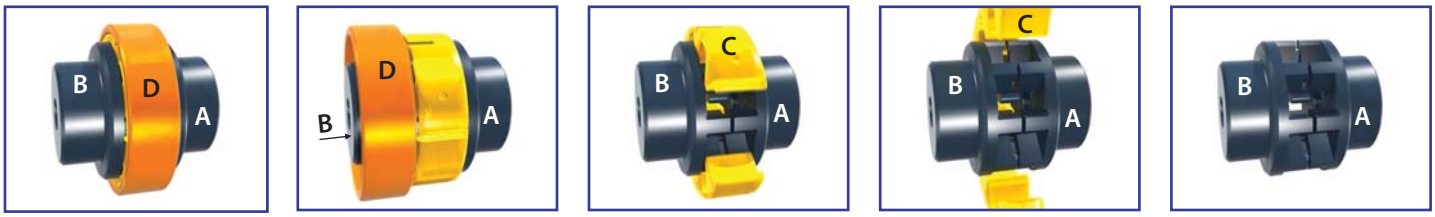
DOWNTIME PROTECTION

CARLSON-DIMOND & WRIGHT, INC.

CDWdrives Flex Couplings

Protect your equipment from costly downtime!

Now there's a new solution to one of the most costly and troublesome problems facing maintenance personnel – coupling failure and the expensive down time associated with fixing it. CDWdrives offers maintenance free elastomeric coupling solutions.



Features and Benefits

- Coupling insert removable without the need to move either driving or driven equipment.
- Change out of coupling insert is faster than any other coupling.
- No lubrication or maintenance required over the life of the insert.
- Polyurethane insert hardness options available to optimize torque capacity and damping.
- Polyurethane insert is very resistant to chemical attack.
- Standard insert can handle large temperature range from -40 to 80°C (-40 to 180°F).
- High temperature insert available up to 150°C (300°F).
- Hubs can be rotated independently during motor test.
- No metal to metal contact.
- Large bore to torque capacity.
- Vertical operation possible with standard coupling.
- Retaining rings provided with locking screws as standard.

***CDWdrives* Flex Coupling has only four parts -- Requires no bolts or nuts or special tools**

A polyurethane, axially split insert (item C) fits between two hubs (items A & B) so installation and removal can be achieved without moving hubs. A polyamide or steel retaining ring (item D) is installed over the insert securing both insert and ring between hubs.

Assembly & Disassembly

Once hubs (A) and (B) and retaining ring (D) have been installed and aligned on the shafts the coupling hubs will not have to be moved again during the life of the equipment. Elastic insert (C) is installed between parallel slots formed by the hub teeth. With the insert in position, slide retaining ring (D) into position over the elastic insert.

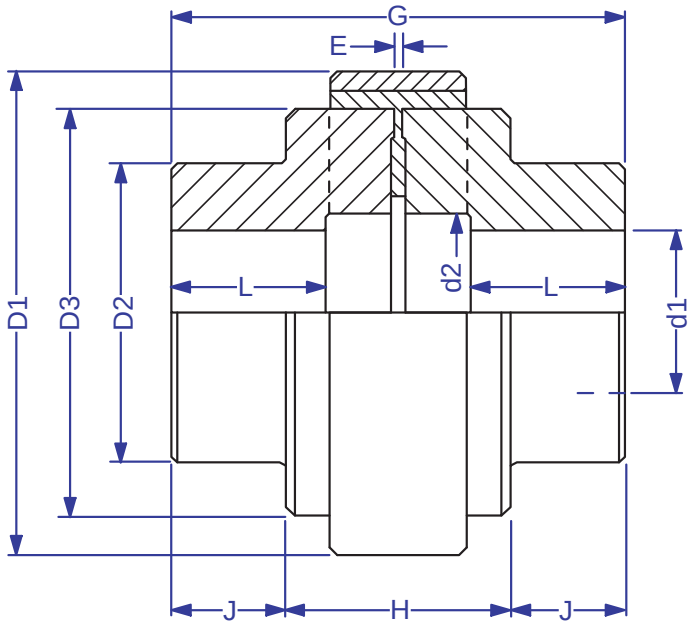
Removing and replacing the coupling insert is easy and requires no special tools. By removing the retaining ring, the insert can be quickly and easily removed and replaced without the need to undo screws, bolts or other fasteners.

CDWdrives Elastomeric Insert

The elastic insert is manufactured from a special blend of polyurethane and is available in three styles of compound and three hardness ratings allowing the most appropriate insert to be selected for the application.

The standard (Yellow) elastic insert is supplied at 95 shore A. High performance inserts type HD and HDT are colored Brown and Red respectively and enable torque ratings to be increased by 40% (consult CDWdrives).

Color Coded Elastic Inserts				
Type	**Code**	**Hardness**	**Color**	**Temp Rating**
Standard	STD	80 Shore A	Blue	-40 / 180° F
		95 Shore A	Yellow	
High Temp	HT	95 Shore A	Orange	-40 / 300° F
High Performance	HD	97 Shore A	Brown	-40 / 180° F
	HDT	97 Shore A	Red	-40 / 300° F



Technical Details and Dimensions

Coupling Type		A00	A0	A1	A2	A3B	A4B	A45	A5B	A55	A6	A7	A8	A9	A10	A11
Style STD Insert	Maximum HP per 100 rpm	0.34	0.80	1.5	4.0	8.0	16.0	28.3	40.4	52.5	64.6	129	242	403	646	786
	Max Cont. Torque in-lb	214	504	945	2,532	5,040	10,080	17,830	25,452	33,075	40,700	81,145	152,460	253,890	406,980	495,180
Style HD Insert	Maximum HP per 100 rpm	- - - -	- - - -	2.0	5.3	10.4	21.7	36.6	53.0	68.6	87.7	156	294	468	755	1056
	Max Cont. Torque in-lb	- - - -	- - - -	1,260	3,340	6,550	13,670	23,060	33,390	43,220	55,250	98,280	185,220	294,840	475,650	665,280
Technical Data	Max. Speed - Unbalanced	9100	8200	7250	5440	4200	3275	2800	2600	2350	2200	1900	1600	1350	1100	1100
	Max. Speed - Balanced	10000	9000	8000	6500	4800	3600	3100	2900	2600	2500	2200	1850	1600	1250	1250
	Moment of Inertia (lb-in^2)	N/A	N/A	4.1	17.1	41	171	350	530	940	1,494	2,820	7,946	16,918	41,013	54,684
Displacement Values	Weight (lb)	0.7	1.8	3.7	8.6	15	29	42	57	79	110	154	309	474	772	903
	Axial Tolerance (in)	+0.012	+0.012	+0.02	+0.02	+0.03	+0.03	+0.04	+0.04	+0.04	+0.04	+0.04	+0.06	+0.06	+0.08	+0.08
	Radial / Parallel (in)	0.02	0.02	0.04	0.04	0.04	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.078	0.078	0.078
	Angular Tolerance	2”	2”	2”	2”	2”	1.3”	1.3”	1.3”	1.3”	1.3”	1”	1”	1”	1”	1”

Coupling Type		A00	A0	A1	A2	A3B	A4B	A45	A5B	A55	A6	A7	A8	A9	A10	A11
Dimensions (inches)	Max. Bore d1	7/8	1-3/8	1-5/8	2-1/8	2-3/4	3-3/4	3-1/4	4-1/2	4	4-1/2	5-1/2	6-1/8	7-1/2	9	9
	Pilot Bore	0.16	0.31	0.55	0.67	0.75	0.94	0.98	1.14	1.18	1.54	1.89	2.48	2.87	3.78	3.78
	D1	1.73	2.56	3.27	4.37	5.67	7.17	7.95	8.86	9.84	10.43	12.05	14.29	16.73	20.59	19.80
	D2	1.38	2.05	2.56	3.15	4.13	5.31	4.92	6.30	6.10	7.09	8.07	9.53	11.02	12.99	13.78
	D3	1.38	2.05	2.56	3.39	4.57	5.91	6.69	7.48	8.46	9.17	10.51	12.83	15.16	19.02	18.03
	d2	0.87	1.26	1.54	1.77	2.05	2.76	3.54	3.50	4.53	4.41	5.31	6.18	7.40	8.58	8.50
	G	2.01	2.87	3.58	5.00	6.14	7.09	7.80	8.50	9.69	10.24	12.20	15.04	16.54	18.98	20.16
	L	0.75	1.10	1.34	1.85	2.20	2.48	2.76	3.03	3.54	3.74	4.57	5.79	6.38	7.40	7.48
	Standard “DBSE”	0.51	0.67	0.91	1.30	1.73	2.13	2.28	2.44	2.60	2.76	3.07	3.46	3.74	4.17	5.20
	Dist. Between Hubs”E”	0.06	0.06	0.06	0.10	0.10	0.14	0.14	0.14	.014	0.14	0.16	0.20	.020	0.24	0.24
	H	- - - -	- - - -	- - - -	2.17	2.56	3.35	3.66	3.98	4.29	4.69	5.28	6.06	6.38	7.56	8.50
	J	- - - -	- - - -	- - - -	1.42	1.77	1.85	2.05	2.24	2.68	2.76	3.46	4.49	5.08	5.71	5.83

1. STD inserts will be supplied as standard unless specified. High Torque (HD) Inserts can be supplied upon request.
2. Maximum speeds are based on Cast Iron Hubs, Higher speeds may be attained using Ductile Iron or Steel Hubs - Consult Engineering.
3. Distance Between Shaft Ends (DBSE) is based on the shafts mating flush with the end of the hub face. Shorter or longer shaft separations may be obtained by overhanging the shaft or hub.
4. Weights and Inertia’s are based on solid hubs.
5. Max bore for steel hubs - A45 = 4; A55 = 4-3/4; A6 = 5; A7 = 6

CDWdrives Flex Couplings

Coupling Selection

Method

Data required for Coupling Selection

- Application details (for service factor)
- Horsepower and rpm of the driver
- Shaft details of the driving and driven equipment

1. Determine the service factor (SF) from the application and classification lists below
2. Calculate the maximum HP/100 rpm rating:
   HP/100 rpm = (HP x 100 x SF)/rpm
   Select the coupling which has a higher max rating
3. Compare the maximum rpm capacity & bore requirements to the catalog limits for the coupling selected

Example

Driver: Water Turbine (100 HP at 1800 rpm)
Driven equipment: Screw Compressor
Turbine Bore: 2.38″ Compressor Bore: 2.00″

Distance Between Shaft Ends: 5″

Service Factor for the Water Turbine & Screw Compressor: SF=2

HP/100 rpm = (100 HP x 100 x 2) / 1800
HP/100 rpm = 11.1

Coupling selection based on max rating: A4B
Coupling Bore Capacity: 2-7/8″
Maximum Speed for A4B is 3275 rpm unbalanced

DBSE for A4B is 5″
A4B is acceptable in this application

Service Factors - SF

Load Characteristics	Electric Motor, Steam Turbine, Gas Turbine	Steam Engine, Water Turbine, 8 Cyl. Rec. Engine	6 Cyl. Recep. Engine	4 Cyl. Recep. Engine
Constant Torque - eg. Centrifugal pumps, compressors & blowers, light duty agitators and fans.	1.0	1.5	2.0	2.5
Slight Fluctuations - eg. Slurry pumps, Screw compressors, Lobe and Vane Blowers.	1.5	2.0	2.5	3.0
Moderate Fluctuations and/or Slight Shock Loads Double acting pumps, Recip. Comp.	2.0	2.5	3.0	3.5
Large Fluctuations and/or Moderate Shock Loads 1 or 2 Cylinder Recip. pumps.	2.5	3.0	3.5	4.0
Shock Loads or Light Torque Reversals Slitters, Rod Mill, Hot Mill	3.0	3.5	4.0	Consult Factory
Heavy Shock Loads or Large Torque Reversals Feed Rolls, Reversing Mills	Consult Factory	Consult Factory	Consult Factory	Consult Factory

1. Use a minimum Service Factor of 1.25 when driving through a gearbox or using a direct on-line electric motor.
2. Consult *CDWdrives* when using a reciprocating engine with fewer than 4 cylinders.
3. Service Factors provided are for reference only. Customer experience may dictate the selection of different service factors.

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