Flexible Shaft Core Types

POWER DRIVE

To choose the right diameter Elliott core for power drive flexible shaft applications (over 100 rpm), you must know:

1. Hp and torque to be transmitted by core
2. Rpm
3. Minimum radius of bend
4. Maximum torque (starting or stopping)
5. Direction of rotation

In the table below, locate the hp value of your application in the proper column under "Radius of Operation." Compare your actual torque to the maximum dynamic torque capacity taking care not to exceed it. If you do exceed the maximum dynamic torque capacity, continue down the column of Radius of Operation until you reach a value large enough for your application.

If your hp is too large, verify if your actual torque requirements are within the range of flexible shafting. Use the following formulas to calculate your power requirements.

$$\text{torque} = \frac{\text{hp} \times 63{,}000}{\text{rpm}} \qquad \text{hp} = \frac{\text{torque} \times \text{rpm}}{63{,}000}$$

CORE DATA							H.P. RATING-MAXIMUM DYNAMIC TORQUE (LB-IN) AT GIVEN RADIUS (H.P. Values in shaded area)									
							RADIUS OF OPERATION (INCHES)									
Nominal Dia	Actual Dia	Part No (Note C)	Wt/100 Ft (lbs)	Max. Static Torque Capacity (LB-In) (Note B)	Max. Continuous RPM	Min Radius of Operation (Inches)	3	4	6	8	10	12	15	20	25	50
1/8"	.125 .130	10170	3.3	12	20,000	3	.04 .5	.08 1.0	.12 1.6	.14 1.8	.15 1.9	.15 1.9	.16 2.0	.16 2.1	.17 2.3	.18 2.5
5/32"	.145 .150	10168	4.5	24	20,000	4		.10 1.5	.24 3.5	.28 5.0	.32 5.5	.34 5.8	.37 6.0	.38 6.2	.40 6.5	.44 7.0
3/16"	.181 .185	10630	6.8	48	15,000	4		.19 4.0	.34 5.5	.40 7.0	.46 7.5	.49 8.0	.53 8.5	.57 9.0	.60 9.5	.66 12.0
1/4"	.241 .245	8145	12.5	96	15,000	5			.44 12.0	.50 14.0	.60 15.0	.65 16.0	.70 18.0	.75 20.0	.80 22.0	.87 24.0
1/4"	.248 .252	8552	12.4	88	20,000	5			.46 13.0	.52 15.0	.58 15.5	.62 16.0	.66 17.0	.70 18.0	.75 20.0	.80 22.0
5/16"	.309 .312	9723	19.2	190	10,000	6			.51 18.0	.62 20.0	.74 24.0	.82 26.0	.91 30.0	1.00 32.0	1.05 35.0	1.10 40.0
3/8"	.370 .374	8149	28.2	250	10,000	6			.62 30.0	.88 42.0	1.10 48.0	1.20 60.0	1.40 55.0	1.50 65.0	1.60 70.0	1.70 75.0
7/16"	.437 .441	8134	38.5	380	6000	6			.74 40.0	1.00 50.0	1.20 60.0	1.40 65.0	1.60 75.0	1.80 80.0	2.00 85.0	2.10 90.1
1/2"	.500 .496	8585	49.6	500	6000	6			.80 50.0	1.10 60.0	1.30 74.0	1.50 88.0	1.80 95.0	2.10 110.0	2.30 130.0	2.60 150.0
5/8"	.621 .626	8586	77.6	700	4000	8				1.40 100.0	2.00 132.0	2.40 158.00	2.80 180.0	3.10 190.0	3.30 205.0	3.60 235.0
11/16"	.677 .681	9263	91.2	860	3750	10					2.20 150.0	2.60 172.0	3.00 198.0	3.40 215.0	3.60 232.0	3.90 260.0
3/4"	.740 .747	8587	112.7	980	3000	15							3.00 180.0	3.40 200.0	4.00 220.0	4.80 350.0
1"	.990 .997	8588	200	1300	2500	20								4.40 380.0	5.00 5000	7.00 7200
1-1/4"	1.240 1.247	8559	310	1900	2500	20								6.00 420.0	9.00 7000	10.0 1200.0

Notes:

A. Each core can transmit hp up to its maximum rpm, as long as the maximum dynamic torque capacity is not exceeded (for higher rpms contact Elliott.)
B. Each core will either break or helix under this load. For short-term overloads (shock loads), do not exceed 50% of this value.
C. Direction of operation is always determined by observing from behind the driving end. Add a (-1) to this part number for clockwise operation and a (-2) for counter-clockwise operation.