

**QUARTER TURN DRIVES** are used to transmit power from a horizontal shaft to a vertical shaft or vice versa. On a V-Belt quarter turn drive, made to order sheaves with deeper and wider grooves are required. See Table 15 below for sheave face width.

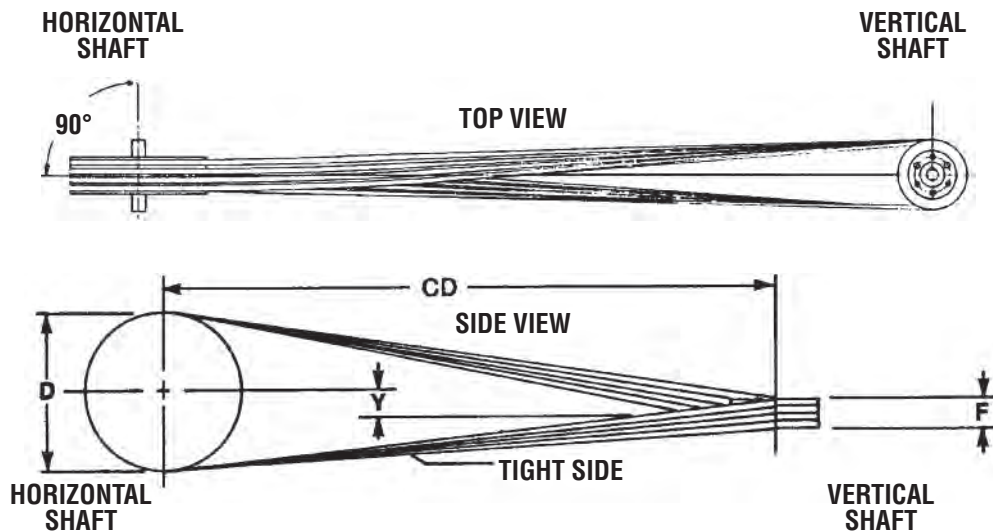
To design a quarter turn drive, proceed as you would to select any conventional V-belt drive. Taking the following special points into consideration:

1. Maximum speed ratio 2.5 to 1.
2. Center distance should be equal to 5.5 times the sum of the diameter of the large sheave plus its face width. Long centers are necessary to insure the angle of entry of the belts in the sheave grooves is not more than 5 degrees.
3. The center line of the horizontal shaft on the quarter turn drives should be above the center of the vertical shaft sheave (see sketches below).

4. Use 90% of the horsepower rating given in the basic horsepower tables.
5. Arc of contact correction factor can be disregarded on Quarter Turn Drives.

### ALIGNING THE DRIVE

When looking down on the drive (Top View), sheaves should be installed so that a line from the center of the Vertical Shaft will pass through the center of the face of the sheave on the horizontal shaft. Both shafts should be at right angles to this line.



Minimum  $CD = 5.5 (D + F)$   
 $D =$  Pitch Diameter  
 $F =$  Face Width (from Table 15)

When looking at the drive from the side (Side View) the center of the horizontal shaft should be above the center of the sheave on the Vertical Shaft by the amount shown under value "Y" from Table 14.

**Table 14 — Quarter-Turn Drive Y Dimensions**

Drive Center Distance (CD)	Y	Drive Center Distance (CD)	Y
60"	2.50"	160"	6.50"
80"	2.75"	180"	7.75"
100"	3.00"	200"	9.00"
120"	4.00"	220"	10.50"
140"	5.25"	240"	12.00"

**Table 15 — Face Width "F" of Sheaves Used on Quarter-Turn Drives**

Section	No. of Grooves												Add To P.D. to Get O.D.
	1	2	3	4	5	6	7	8	9	10	11	12	
A	.87	1.62	2.37	3.12	3.87	4.62	5.37	6.12	6.87	7.62	8.37	9.12	.560
B	1.12	2.00	2.87	3.75	4.62	5.50	6.37	7.25	8.12	9.00	9.87	10.75	.710
C	1.62	2.87	4.12	5.37	6.62	7.87	9.12	10.37	11.62	12.87	14.12	15.37	1.010
D	2.12	3.87	5.62	7.37	9.12	10.87	12.62	14.37	16.12	17.87	19.62	21.37	1.430
E	2.62	4.68	6.75	8.81	10.87	12.93	15.00	17.06	19.12	21.18	23.25	25.31	1.690