Miniature oscillating handler

Torque transmission capacity table

SANDEX

Reading the capacity table for oscillating handler

The capacity table gives dynamic torque To and dynamic allowable load Wo by oscillating angles, number of stops, life, and rotating speed. This table was calculated based on a life expectancy of 12,000 hours of normal operation including mounting, lubrication, and handling conditions. Adverse conditions and poor maintenance can affect the transmission capacity and life of the oscillate handler.
Beside, if you misunderstand how to read the capacity table when you select a model, you are not able to select proper model. Please carefully pay attention below instructions.

Oscillating Angle φ (deg)	Index Period θ_0 (deg)	Static Torque Ts (N·m)	Dynamic Torque To (N·m) Input Shaft Speed N(rpm) 20	40	60	80	100	120	150	200	Camshaft Frictional Torque Tx (N·m)
30	32	5.1	2.6	2.2	2.0	1.8	1.7	1.5	1.4	1.2	1.3
	45	6.0	2.6	2.2	2.0	1.8	1.7	1.6	1.4	1.2	
	60	6.6	2.5	2.1	1.9	1.7	1.6	1.5	1.4	1.2	
45	45	4.9	2.3								
	60	5.7									

1. Static torque(Ts) is the maximum available torque on output shaft.
2. Dynamic torque(To) is the number of maximum allowable consecutive output torque based on a life of 12,000 hours.
3. Dynamic allowable load(Wo) is the number of maximum allowable consecutive load based on a life of 12,000 hours.
4. Cam shaft friction torque(Tx) is the maximum frication torque of cam(input) shaft when

Index period

When are two or more index periods are given for the oscillating angle, number of stops, and lift, the smaller number is the minimum index periods. Cam can not be manufactured for index periods shorter than this minimum value.
When designing the timing, try to make the index period as large as possible.

Dynamic torque, dynamic allowable load, and rotating speeds

The dynamic torque and dynamic allowable loads given in each capacity table will vary according to the oscillating angle, number of stops, lift, and rotating speed. Always check the values according to actual using conditions.

Cam curves

The output displacement of oscillating handler is produced by a modified sine curve (MS curve) or a modified constant velocity curve (MCV50). If your application requires synchronized operation at equivalent speeds or special displacement specifications. Please consult Sankyo.

Number of stops

This is the number of stops the output makes during one revolution. If the number of stops is S, output shaft will rotate 360/S degrees for one index.

Number of Stops S	Index Period θ_1 (deg)	Static Torque Ts (N·m)
2	190	5.0
	220	5.5

Lifting stroke

This is the different amount of lifting stroke output shaft moves. It is used at Oscillating and Indexing Handlers.

Lift LT (mm)	Index Period θ_L (deg)	20
5	30	14.7
	45	14.7

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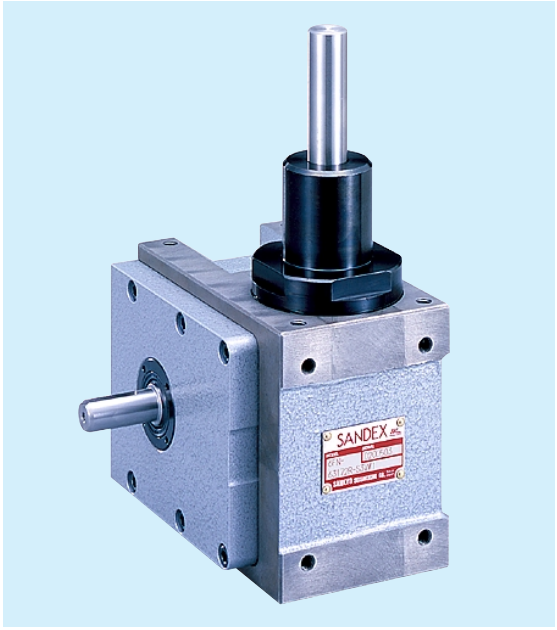

Miniature oscillating handler

Torque transmission capacity table

SANDEX

6FN

Torque capacity table of oscillating motion/Cam curves:MS

Table 6FN-1

Oscillating Angle φ (deg)	Index Period θ_0 (deg)	Static Torque Ts (N·m)	Dynamic Torque To (N·m) Input Shaft Speed N(rpm) 20	40	60	80	100	120	150	200	Camshaft Frictional Torque Tx (N·m)
30	32	19.5	9.7	8.0	7.3	6.6	6.0	5.5	4.7	3.6	3.9
	45	22.6	9.4	7.8	7.1	6.5	6.0	5.6	5.0	4.2	
	60	24.5	9.0	7.5	6.9	6.2	5.8	5.4	5.0	4.3	
45	45	18.8	8.6	7.1	6.5	5.8	5.3	4.9	4.3	3.4	
	60	21.6	8.4	7.0	6.4	5.8	5.4	5.0	4.5	3.8	
	75	23.3	8.2	6.8	6.2	5.7	5.3	4.9	4.5	3.9	
60	60	18.8	8.0	6.7	6.1	5.5	5.0	4.7	4.1	3.4	
	75	21.0	7.9	6.6	6.0	5.5	5.1	4.7	4.3	3.6	
	90	22.6	7.8	6.5	5.9	5.4	5.0	4.7	4.3	3.7	
90	90	18.8	7.1	5.9	5.4	4.9	4.5	4.2	3.8	3.2	
	105	20.4	7.0	5.9	5.4	4.9	4.5	4.2	3.8	3.3	
	120	21.6	7.0	5.8	5.3	4.8	4.5	4.2	3.9	3.4	

Torque capacity table of oscillating motion/Cam curves:MCV50

120	100	20.2	7.3	6.1	5.5	5.0	4.6	4.2	3.7	2.9	3.9
	120	21.8	7.2	6.0	5.5	4.9	4.6	4.2	3.8	3.2	
180	130	18.8	6.6	5.5	5.0	4.5	4.2	3.8	3.4	2.7	
	150	20.2	6.6	5.5	5.0	4.5	4.2	3.9	3.5	2.9	

Torque capacity table of indexing motion/Cam curves:MS

Table 6FN-2

Number of Stops S	Index Period θ_1 (deg)	Static Torque Ts (N·m)	Dynamic Torque To (N·m) Input Shaft Speed N(rpm) 20	40	60	80	100	120	150	200	Camshaft Frictional Torque Tx (N·m)
2	180	18.8	8.2	6.9	6.3	5.7	5.3	5.0	4.6	4.1	3.9
	210	20.4	8.2	6.8	6.2	5.7	5.3	5.0	4.6	4.1	
3	120	18.8	9.9	8.2	7.5	6.9	6.4	6.0	5.5	4.8	
	150	21.0	9.7	8.2	7.5	6.8	6.3	6.0	5.5	4.9	
	180	22.6	9.6	8.0	7.3	6.7	6.2	5.9	5.5	4.9	
4	100	15.7	8.7	7.3	6.7	6.1	5.6	5.3	4.8	4.2	
	125	17.2	8.5	7.1	6.5	6.0	5.5	5.2	4.8	4.2	
	150	18.2	8.3	7.0	6.4	5.8	5.4	5.1	4.7	4.2	
6	60	18.8	13.5	11.3	10.3	9.4	8.7	8.1	7.4	6.3	
	90	22.6	13.1	10.9	10.0	9.1	8.5	8.0	7.4	6.6	
	120	24.5	12.5	10.5	9.6	8.8	8.2	7.7	7.2	6.4	
8	50	15.7	11.9	10.0	9.1	8.3	7.6	7.1	6.4	5.4	
	80	18.3	11.2	9.4	8.6	7.9	7.3	6.9	6.3	5.6	
	120	19.9	10.3	8.6	7.9	7.2	6.8	6.4	5.9	5.3	

Please consult SANKYO in case of requiring more than 200rpm.

Carrying capacity table/Cam curves:MS

Table 6FN-3

Lift LT (mm)	Index Period θ_L (deg)	Dynamic Allowable Load Wo (N) Input Shaft Speed N(rpm) 20	40	60	80	100	120	150	200
5	23	39.2	39.2	39.2	25.6	12.9	4.4		
	45	39.2	39.2	39.2	39.2	39.2	34.2	21.5	7.4
	60	39.2	39.2	39.2	39.2	39.2	39.2	34.1	18.7
10	32	39.2	39.2	39.2	23.6	11.4	3.3		
	45	39.2	39.2	39.2	39.2	27.9	17.5	6.7	
	65	39.2	39.2	39.2	39.2	39.2	34.9	22.2	8.0
15	39	39.2	39.2	39.2	22.5	10.6			
	55	39.2	39.2	39.2	39.2	27.4	17.1	6.4	
	70	39.2	39.2	39.2	39.2	39.2	28.6	16.3	3.4
20	45	39.2	39.2	39.2	21.8	10.1			
	65	39.2	39.2	39.2	39.2	28.2	17.9	7.1	
	80	39.2	39.2	39.2	39.2	38.7	27.9	15.7	3.0
25	51	39.2	39.2	38.8	21.4	9.9			
	70	39.2	39.2	39.2	39.0	25.6	15.6	5.3	
	90	39.2	39.2	39.2	39.2	38.5	27.7	15.7	3.0

Note : If the timing requires intermediate stop, above index period and number of torque may be differed.