M SERIES DUTY CYCLE (Table 3)
Uni-Lift Duty Limit at Full Rated Capacity and 80° F Ambient Temperature

MODEL and SIZE	RATIO	TPI	L2 - DUTY LIMIT SERVICE FACTOR @ VARIOUS RPM INPUT SPEEDS								
			50 RPM	115 RPM	172 RPM	345 RPM	600 RPM	870 RPM	1140 RPM	1725 RPM	2587 RPM
M-1	5:1	25	356	230	120	70	44	33	27	20	15
	20:1	100	639	412	211	118	75	57	47	35	25
M-2.5	6:1	24	164	106	56	32	20	15	12	8	7
	24:1	96	450	290	149	83	53	40	34	24	18
M-5	6:1	16	107	70	38	22	14	10	8	6	
	24:1	64	294	190	98	55	36	28	22	16	
M-10	8:1	16	66	43	23	13	8	6	5	4	
	24:1	48	137	89	47	27	18	13	11	8	
M-15	8:1	16	43	29	16	9	5	4	3	2	
	24:1	48	91	59	31	18	12	9	7	5	
M-20	8:1	16	43	28	15	9	5	4	3	2	
	24:1	48	85	55	29	17	11	8	7	5	
M-30	10 2/3:1	16	39	26	14	8	6	4	3		
	32:1	48	81	53	28	16	11	8	7		
M-50	10 2/3:1	16	25	17	9	5	4	3	2		
	32:1	48	52	34	19	11	7	5	4		
M-75	10 2/3:1	16	24	16	8	4	3	2	1		
	32:1	48	51	33	18	11	7	5	4		
M-100	12:1	16	26	17	9	5	4	3	2		
	36:1	48	53	35	20	12	8	6	5		

- Duty Limit Service factor (L_2) = Operating time allowed per hour. The numbers greater than 60 are theoretical values and exceed 100% duty, solely to provide base data for adjusting L_2.
- The L_2 values are based on Uni-Lifts loaded at rated capacity, operating in an ambient temperature of 80° F., with a maximum allowable temperature rise of 100° F.
- For ambient temperatures above 180° F or below -20° F, consult factory.
- For speeds not shown, use the next fastest RPM value.

1. Determine Adjusted Duty Limit : D_2

When the unit load is at rated capacity, and the ambient temperature is at 80° F, the L_2 value from the table equals D_2. If not, proceed to step 1A.

1A) For different temperature service, or a unit load less than rated capacity, use the following equation to determine the Adjusted Duty Limit Service Factor (D_2).

$$D_2 = \frac{(180 - T_A) \times P \times L_2}{100 \times P_4}$$

L_2 = Duty Limit Service Factor (see Table 3)
T_A = Ambient temperature (F°) P=Rated capacity (lbs.)
P_4 = Maximum running load per actuator (lbs.)
P = Rated capacity of the Uni-Lift

2. Determine if Duty Cycle is acceptable:
If $D_2 \geq 60$ minutes, the application is rated for continuous duty.
If $D_2 \geq D_1$ then the application is acceptable.
If $D_2 < D_1$ then the duty cycle limit has been exceeded for this application. You must do one of the following: select larger size Uni-Lift, reduce load by adding additional Uni-Lifts, or reduce speed. If you reduce speed, you must recalculate V_1 and D_1 from the Technical Specifications page 12 steps 6 and 7.

EXAMPLE

A. Consider for an M-10 low ratio 8:1 operating in 100°F ambient temperature, 15,000 lbs. load, and 600 RPM, with a rise of 30 inches and 5 cycles per hour:

$$D_1 = \frac{(2 \times \text{Rise} \times C_h)}{V_1}$$

$$D_1 = \frac{(2 \times 30 \times 5)}{37.5}$$

Duty time per hour = 8.0 minutes per hour

$$D_2 = \frac{(180 - 100) \times 20{,}000 \times 8}{100 \times 15{,}000}$$

Duty cycle limit = 8.53 minutes per hour

Since D_2 is greater than D_1 the application is OK for the duty cycle limit.