

Title: ALLOWABLE MOMENTS OF INERTIA FOR KINETROL STANDARD ACTUATORS/AP POSITIONER COMBINATIONS

METRIC					
Actuator/ Positioner Size (Valve Size)	Calculated Allowable M of I	Weight at Effective Radius Arm			
		0.125M Kg.	0.25m Kg.	0.5m	1m
054 (AP)	0.04 Kg.m ²	2.56	0.64	0.16	0.04
074 (AP)	0.43 Kg.m ²	27.2	6.8	1.7	0.4
084 (AP)	1.98 Kg.m ²	127	32	8	2
094 (AP)	3.65 Kg.m ²	234	58	15	3.7
104 (MP)	10.81 Kg.m ²	692	173	43	11
124 (MP)	25.91 Kg.m ²	1,658	415	104	26
144 (MP)	378.3 Kg.m ²	-	6,053	1513	378
164 (HP)	173.1 Kg.m ²	-	2,770	692	173
184 (HP)	1544 Kg.m ²	-	-	6,177	1,544
204 (HP)	12,214 Kg.m ²	-	-	-	12,214

IMPERIAL					
Actuator/ Positioner Size (Valve Size)	Calculated Allowable M of I	Weight at Effective Radius Arm			
		5" lb.	10" lb.	20" lb.	40" lb.
057 (AP)	137 lb.in ²	5.48	1.37	0.34	0.09
077 (AP)	1,454 lb.in ²	58.2	14.5	3.6	0.9
087 (AP)	6,780 lb.in ²	271	68	17	4.2
097 (AP)	12,489 lb.in ²	500	125	31	7.8
107 (MP)	36,963 lb.in ²	1,479	370	92	23
127 (MP)	88,594 lb.in ²	3,544	886	221	55
147 (MP)	1,293,572 lb.in ²	-	12,936	3,234	808
167 (HP)	591,870 lb.in ²	-	5,919	1,480	370
187 (HP)	5,280,567 lb.in ²	-	-	13,201	3,300
207 (HP)	41,762,540 lb.in ²	-	-	-	26,102

NOTE: The moments of inertia given above are the maximum figures allowable for the load which the positioner/actuator is driving. If these moments of inertia are exceeded, it is possible that the actuator/positioner will hunt due to the high moment of inertia on the output shaft causing the actuator to overshoot the desired position repeatedly and in the extreme it may become unstable.

By changing the positioner control valve, higher inertia valves may be obtained but operating time may be reduced. Consult Kinetrol for details.

These figures are issued for guidance only. Hunting problems can be caused by other factors such as friction.

Kinetrol Limited will not be responsible for sizing decisions made using this data.

Issue	Signed	Date	KINETROL Trading Estate Farnham Surrey England	Doc.No. TD 36
D	<i>RCC</i>	19/5/10		Page 1 of 1