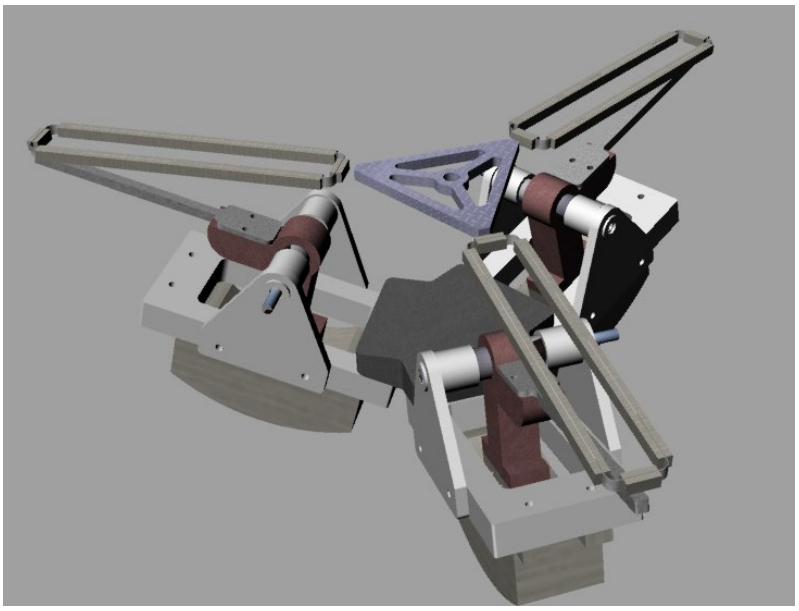
Department of Mechanical Engineering

IIT Delhi

Quotations are invited for Realisation of a fine manipulation system for precision grasping as per the drawing below.

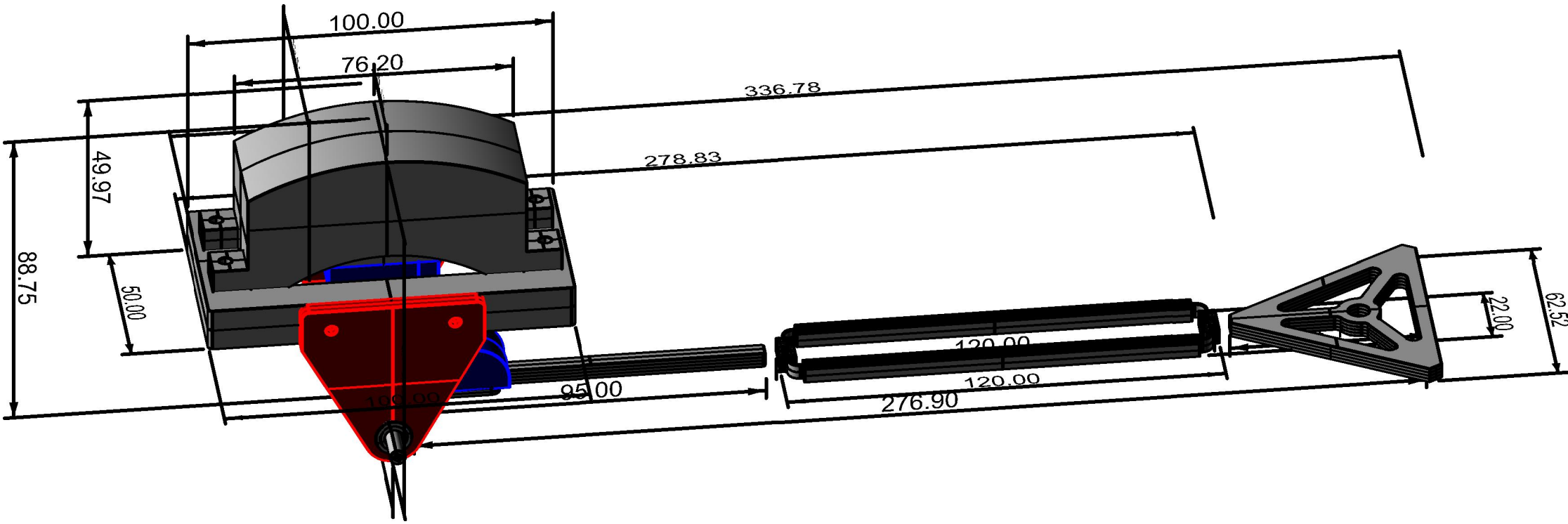


The mechanism is actuated by three RA60-10-0001A sector motors by BEI Kimco, the dimensioned drawing of which is appended. The mechanism is to be assembled in the IIT with these motors which will be provided by the IIT on completion of the fabrication.

Payment term will be 100% against delivery. Quotations for fabricating the same are requested at the office of the undersigned, at Rm 426 Block II, IIT by the 30th of September, 2012.

Sudipto Mukherjee (PI RP02351)

Attachments: RA60-10-0001A.pdf and OneArm.pdf


100.00
76.20
336.78
278.83
49.97
88.75
50.00
95.00
120.00
120.00
276.90
22.00
62.52

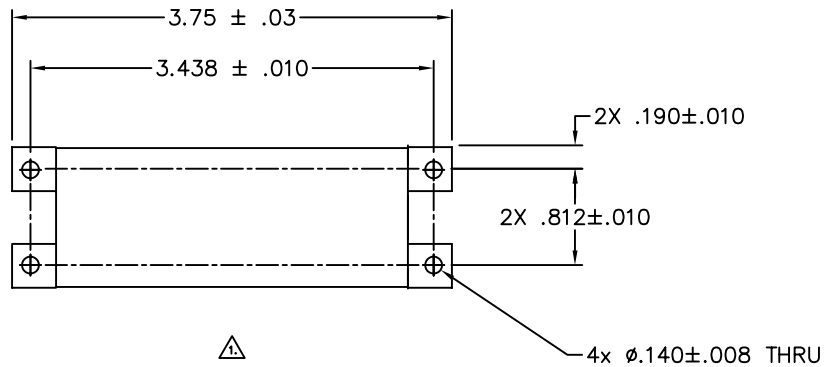
RA60-10-001A	M

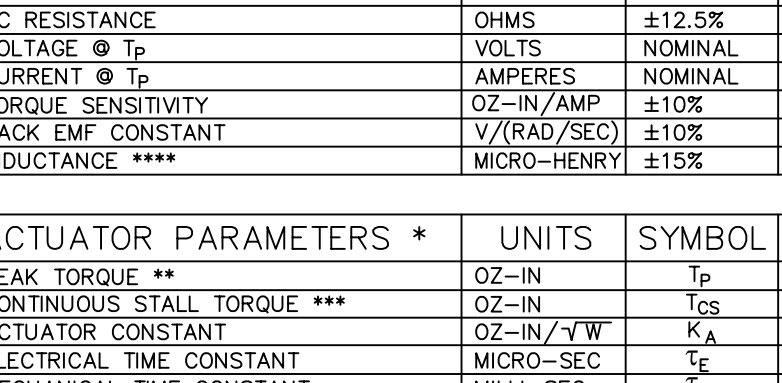
LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
L	99-0886	WINDING LTTER A WAS: Z	SMH	MG	11/12/98
M	070044	UPDATE DRAWING, ADDED RoHS LOGO	RG	MG	02/02/07

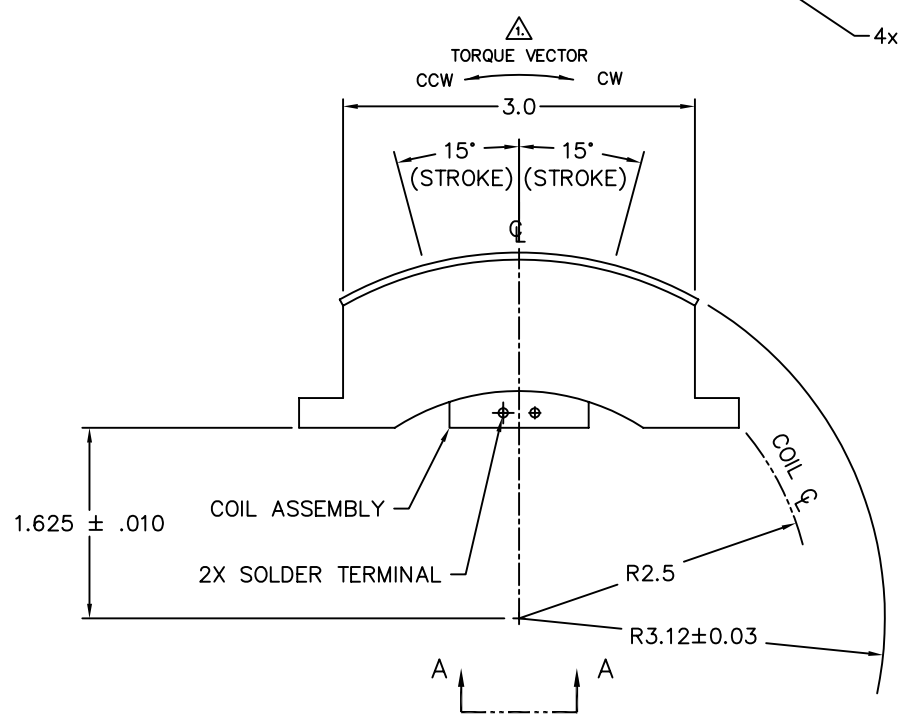
WINDING CONSTANTS *	UNITS	TOL	SYMBOL	WDG A
DC RESISTANCE	OHMS	±12.5%	R	1.9
VOLTAGE @ T_P	VOLTS	NOMINAL	V_P	12.0
CURRENT @ T_P	AMPERES	NOMINAL	I_P	6.31
TORQUE SENSITIVITY	OZ-IN/AMP	±10%	K_T	19
BACK EMF CONSTANT	V/(RAD/SEC)	±10%	K_B	0.134
INDUCTANCE ****	MICRO-HENRY	±15%	L	1.38

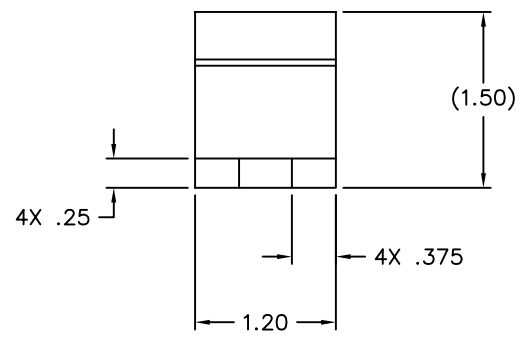
ACTUATOR PARAMETERS *	UNITS	SYMBOL	VALUE
PEAK TORQUE **	OZ-IN	T_P	120
CONTINUOUS STALL TORQUE ***	OZ-IN	T_{CS}	56.1
ACTUATOR CONSTANT	OZ-IN/$\sqrt{W}$	K_A	13.8
ELECTRICAL TIME CONSTANT	MICRO-SEC	τ_E	730
MECHANICAL TIME CONSTANT	MILLI-SEC	τ_M	9.0
POWER I^2R @ T_P	WATTS	P_P	75.8
COIL ASSEMBLY INERTIA	OZ-IN-SEC^2	J_M	0.008
STROKE (ANGULAR)	± DEGREE		15
COIL CLEARANCE	IN		0.015
THERMAL RESISTANCE OF COIL	°C/WATT	θ_{TH}	5.2
MAX. ALLOWABLE WINDING TEMP.	°C	TEMP	155
WEIGHT OF COIL ASSEMBLY	OZ	WT_{CA}	0.75
TOTAL WEIGHT	OZ	WT_T	14.7

* AT MID-STROKE & 25° AMBIENT TEMPERATURE
** 10 SECONDS AT 25°C AMBIENT & 155°C COIL TEMPERATURE
*** 25°C AMBIENT & 155°C WINDING TEMPERATURE
**** MEASURED AT 1000 Hz.









⚠1. A POSITIVE (+) VOLTAGE APPLIED TO THE (+) TERMINAL WILL PRODUCE A TORQUE ON THE COIL ASSEMBLY IN THE CW DIRECTION WHEN VIEWED FROM THE TERMINAL SIDE.

NOTES: UNLESS OTHERWISE SPECIFIED

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED:
- ALL DIMENSIONS ARE IN INCHES
- BREAK SHARP EDGES .015 MAX.
- SURFACE ROUGHNESS √63
- DIMENSIONS APPLY AFTER FINISH
- MAX FILLET R .010

TOLERANCES:
DECIMALS: .X ± .03, .XX ± .01, .XXX ± .005
ANGULAR: ±0° 30'
DO NOT SCALE DRAWING

USED ON:

BEI KIMCO MAGNETICS DIVISION
VISTA, CA 92081

DRAWN: WIEDENHAMMER	DATE: 12/15/82	TITLE: ROTARY ACTUATOR
MECH CHECK: GUERRERO	01/18/07	
APPD: J.K	12/17/82	
FILE NO.: L:\TOP LEVEL\RA\...		SIZE: C · FSCM NO.: 55789 · DWG NO.: RA60-10-001A · REV: M
		SCALE: 2/1 · SHEET: 1 OF 1

RA60-10-001A M