

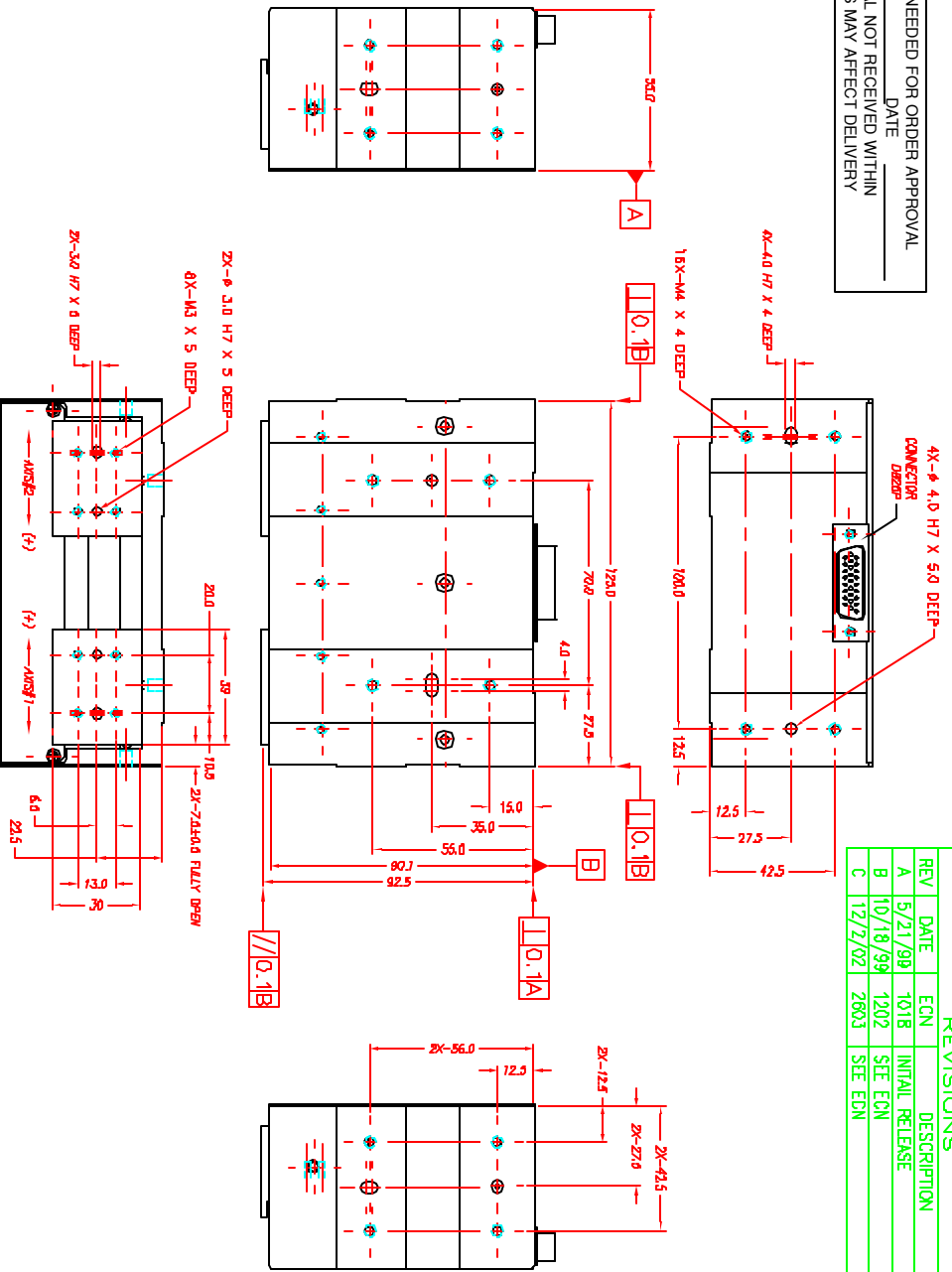
**NOTES: (UNLESS OTHERWISE SPECIFIED)**

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED.
2. ALL DIMENSIONS APPLY AFTER PLATING.
3. ACTUATOR SPECIFICATIONS:  
 LINEAR STROKE: 30 MM (15 MM PER FINGER)  
 FORCE CONSTANT: 2.5 KGMM/AMP (24VDC @1.5 AMP/COIL)  
 PEAK FORCE: 3.5 KGMMS (PER FINGER)  
 COIL DC RESISTANCE: 32 OHMS @ 22°C  
 COIL INDUCTANCE: TBD MH @ 1KHZ  
 MAXIMUM POWER DISSIPATE TO COIL: 72 WATTS/ FINGER  
 COIL HEAT RISE COEFFICIENT: XXXX/WATT @ 22°C  
 LINEAR ENCODER RESOLUTION: 0.5, 1.0, 5.0 MICRON-METER  
 ENCODER ACCURACY: ±4 COUNTS  
 ESTIMATE MOVING MASS: 150 GRAMS/ FINGER  
 ESTIMATE TOTAL MASS: 2.1 KGMMS  
 MAXIMUM ACCELERATION: 30G (W/ 0 GRAMS LOAD)  
 OPERATING TEMPERATURE: -10°C TO +75°C

SIGNATURE NEEDED FOR ORDER APPROVAL  
 SIGN \_\_\_\_\_ DATE \_\_\_\_\_  
 APPROVAL NOT RECEIVED WITHIN  
 48 HOURS MAY AFFECT DELIVERY

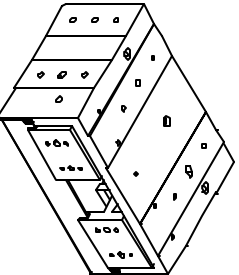
**REVISIONS**

REV	DATE	ECN	DESCRIPTION	APP
A	5/21/99	101B	INITIAL RELEASE	HUY
B	10/18/99	1202	SEE ECN	HUY
C	12/2/02	2803	SEE ECN	SMH



**DR-28P PINKOUT**

1	(AXIS 1) PH. A+
2	(AXIS 1) PH. B+
3	(AXIS 1) PH. Z+
4	NC
5	NC
6	I/O RTN
7	(AXIS 2) PH. B+
8	(AXIS 2) PH. A+
9	(AXIS 2) PH. Z+
10	(AXIS 1) PH. A-
11	(AXIS 1) PH. B-
12	(AXIS 1) PH. Z-
13	(AXIS 2) PH. A-
14	(AXIS 2) PH. B-
15	(AXIS 2) PH. Z-
16	(AXIS 1) LIMIT -
17	(AXIS 2) PH. B-
18	(AXIS 2) PH. A-
19	(AXIS 2) PH. Z-
20	+5VDC
21	SV RTN
22	(AXIS 1) COIL +
23	(AXIS 1) COIL -
24	(AXIS 2) COIL -
25	(AXIS 2) COIL +
26	(AXIS 2) MOTOR +



TOLERANCES ARE: XX ± 0.15D XX ± 0.1 XXX ± 0.05 ANGLARITY ± 0.1° ROUNDNESS ± 0.01 EDGE BREAK Q102 MAX CHAMFER Q103 MAX	WATERBUIL OUTLINE DWG HEAT TREAT: RC MACHINE FINISH DEEP PROTECTIVE FINISH ELECTROLESS NICKEL	DESIGNED BY: TOWN WJ DATE: 11/15/02	REF. NUMBER: GRP50-30
FILE NAME: GRP50-30-05	EXPERT NUTCO: 3.2 ELECTROLESS NICKEL	DRAWN BY: S. HOONMAN DATE: 11/15/02	CONTRACT:
	SCALE: NONE	DWG NOT SCALE DWG	SHEET NUMBER: 1 OF 1
	DRG NUMBER: GRP50-30-05	DWG SIZE: B	REVISION: C

**SMAC**