



**NOTES:**

1. MATERIAL: MAKE FROM TRD MFG. INC.  
AIR CYLINDER CAT. #TA-MF1D-1 1/2 X 4.724 HC-VS  
REF. SOURCE: FLUID POWER CO.  
660 FARGO ELK GROVE VILLAGE, IL. 6007
2. NO GREASEN OR TEFLON COATING IS ALLOWED  
TO BE USED AS LUBRICANT
3. NO ELASTOMER MATERIAL SHALL BE USED AS SEAL OR  
WIPER EXCEPT VITON GRADED FOR AT LEAST 200°C
4. LUBRICATE ALL OF THE VITON SEALS WITH DOW CORNING 710  
FLUID LUBRICANT. THEN TEST THE CYLINDER FOR PROPER  
ACTUATION. FLANGE SIDE COMPRESSION ON PISTON SHALL  
BE POLY PAC. DOW CORNING  
710 IS NOT DESIRABLE IN THE VACUUM. CARE MUST BE  
EXERCISED TO AVOID CONTAMINATION OF THE VACUUM  
CHAMBER DURING ASSEMBLY, TEST AND SHIPMENT
5. DIMENSIONS IN [ ] ARE MILLIMETERS AND FOR REF. ONLY
6. REPLACE CAST IRON GRAPHITE FILLED  
BUSHING WITH BRONZE 660 BUSHING

SYN	CHANGE DESCRIPTION	BY	CHKD	DATE
REVISIONS				

ITEM	DWG/PART NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY																				
<b>PARTS LIST</b>																								
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES		LOG NUMBER <b>A3710001-00</b>	THIS DRAWING IS THE PROPERTY OF <b>ARGONNE NATIONAL LABORATORY</b>																					
TOLERANCES		<table border="1"> <tr> <td>DESIGNED BY</td> <td>DATE</td> <td>CHIEF DESIGN ENGINEER</td> <td>DATE</td> </tr> <tr> <td>CHECKED BY</td> <td>DATE</td> <td>GP LEADER</td> <td>DATE</td> </tr> <tr> <td>DESIGNER</td> <td>DATE</td> <td>PROJECT MGR.</td> <td>DATE</td> </tr> <tr> <td>RESPONSIBLE ENGINEER</td> <td>DATE</td> <td>APPROVED/RELEASED</td> <td>DATE</td> </tr> <tr> <td colspan="2">MATERIAL SEE NOTE #1</td> <td>SCALE</td> <td>SIZE</td> </tr> </table>			DESIGNED BY	DATE	CHIEF DESIGN ENGINEER	DATE	CHECKED BY	DATE	GP LEADER	DATE	DESIGNER	DATE	PROJECT MGR.	DATE	RESPONSIBLE ENGINEER	DATE	APPROVED/RELEASED	DATE	MATERIAL SEE NOTE #1		SCALE	SIZE
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MATERIAL SEE NOTE #1		SCALE	SIZE																					
DECIMALS	ANGULAR																							
.X ± .1 [2.5]	± 0°30'	DRAWN BY	DATE																					
.XX ± .01 [0.25]		CHECKED BY	DATE																					
.XXX ± .005 [0.13]		DESIGNER	DATE																					
SURFACE ROUGHNESS 125 ✓		RESPONSIBLE ENGINEER	DATE																					
REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.		TITLE <b>ADVANCED PHOTON SOURCE</b>																						
SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46		A3-71 LIGHT LOAD PNEUMATIC ACTUATOR AIR CYLINDER																						
DIMENSIONING & TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14		DRAWING NUMBER																						
DO NOT SCALE DRAWING		A3-710001-00																						