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REV. A

SAE AS20708/139

RATIONALE

THIS REVISION CONSISTS OF A 5 (FIVE) YEAR REVIEW, WHICH PROVIDES UPDATES TO CURRENT FORMAT AND REFERENCES.

NOTICE

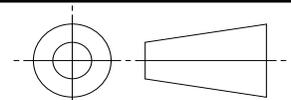
THE COMPLETE REQUIREMENTS FOR PROCURING THE SYNCHRO DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE ISSUE IN EFFECT OF SAE AS20708.

FEDERAL SUPPLY CLASS
5990

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THIRD ANGLE PROJECTION



CUSTODIAN: AE-7A

PROCUREMENT SPECIFICATION: MIL-S-20708

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SYNCHRO CONTROL TRANSMITTER,
TYPE 31CX6a

SAE AS20708/139
SHEET 1 OF 4

REV. A

ISSUED 2004-04 REVISED 2011-10

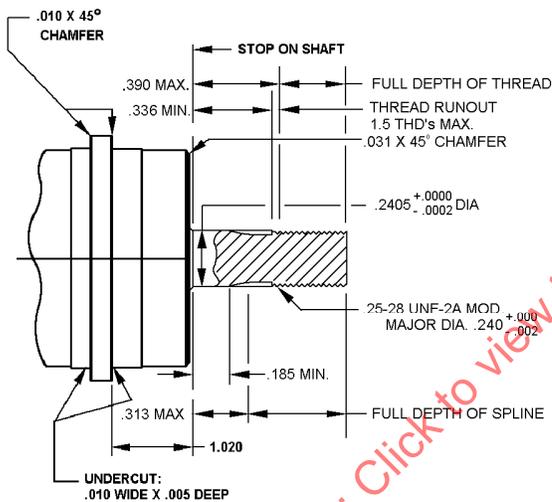
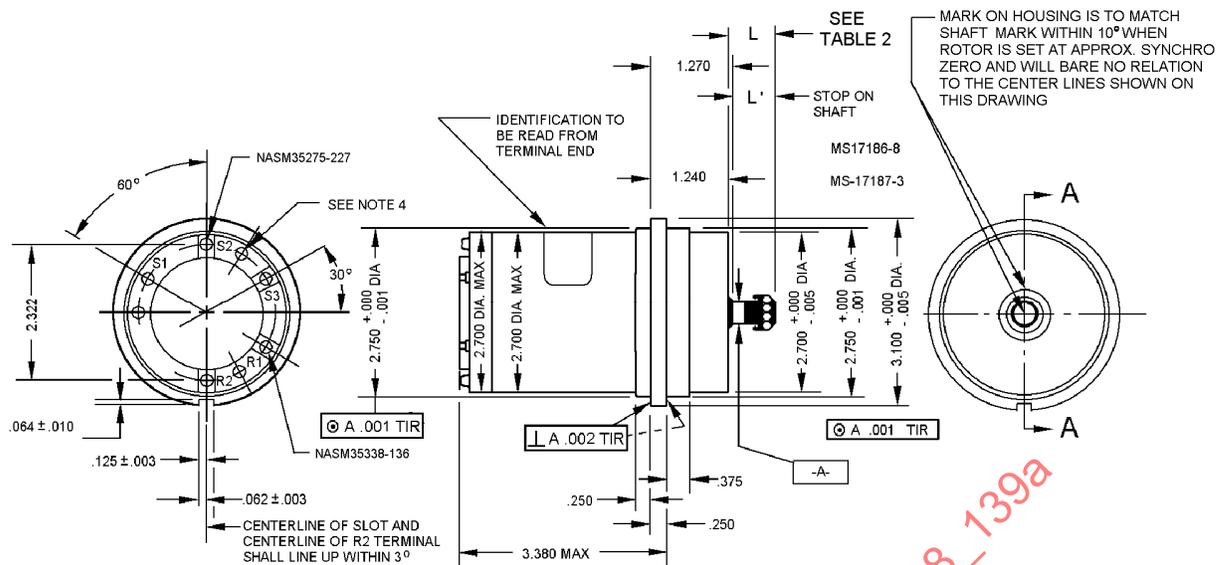
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PARTIAL SECTION
A-A

SPLINE DATA	
TEETH	22
DIAMETRAL PITCH	96
PITCH DIAMETER	.2291 +.000 -.002
OUTSIDE DIAMETER	.2405 +.0000 -.0005
PRESSURE ANGLE	20°
ROOT DIAMETER MAX.	.205
TOOTH FORM	FULL DEPTH INVOLUTE
NOTE: THE END FUNCTION OF THIS SPLINE IS FOR POSITIVE ROTATIONAL FASTENINGS. IT IS NOT TO BE USED AS A GEAR. THIS SPLINE SHALL BE INSPECTED BY (SPLINE) "GO COMPOSITE RING GAGE" NAVORD DWG (10001) 929471	

FIGURE 1 – SYNCHRO CONTROL TRANSMITTER, TYPE 31CX6a

NOTES:

1. PERPENDICULARITY AND CONCENTRICITY SHALL BE MEASURED WITH THE UNIT IN A VERTICAL POSITION SUPPORTED BY THE SHAFT. THEN THE HOUSING ROTATED.
2. RUNOUT OF FEATURE “-A-” (SMOOTH PORTION) OF SHAFT SHALL NOT EXCEED 0.0008 TIR.
3. END PLAY AND RADIAL PLAY SHALL BE MEASURED DURING THE REVERSAL OF THE FOLLOWING LOADS:
 END PLAY – 1 (ONE) POUND RADIAL PLAY – 1 (ONE) POUND
4. THE TERMINAL BLOCK SHALL BE SECURED BY SCREWS OTHER THAN THE TERMINAL SCREWS. RECESSES SHALL ALLOW TERMINAL LUG SAE-AS25036-6 TO BE INSTALLED WITH THE BARRELS INBOARD OR OUTBOARD, AND PREVENT THE LUGS FROM TURNING.
5. MINOR VARIATIONS OF UNIT CONFIGURATION ARE PERMITTED FOR UNDIMENSIONED DESIGN DETAIL.
6. THE FOLLOWING LIST OF HARDWARE, NASM35275-227 MACHINE SCREW [5 (FIVE) REQUIRED], NASM35338-136 LOCK WASHER [5 (FIVE) REQUIRED], MS17186-8 DRIVE WASHER [1 (ONE) REQUIRED], MS17187-3 NUT [1(ONE) REQUIRED], SHALL BE PACKAGED IN A VENTILATED ENVELOPE MADE OF MATERIAL HAVING A PH VALUE OF 6-8, THAT IS COMPATIBLE WITH THE WEIGHT OF THE CONTENTS. THEN THE PACKAGED HARDWARE SHALL BE PLACED IN THE UNIT SYNCHRO PACKAGE. FOR INFORMATION ONLY, SEE SYNCHRO CLAMP MS17183.
7. PENDING ISSUANCE OF A QUALIFIED PRODUCTS LIST (QPL), A SAMPLE OF THE SYNCHROS TO BE FURNISHED UNDER THIS SPECIFICATION SHALL BE SUBJECTED TO THE FIRST ARTICLE TESTS, AS SPECIFIED IN SAE-AS20708.
8. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ON DECIMALS ± 0.005 , ANGLES ± 2 DEGREES.

TABLE 1 – REQUIREMENTS

REQUIREMENTS	VALUE	UNIT	TOLERANCE
FREQUENCY	60	HZ	$\pm 1\%$
PRIMARY VOLTAGE	115	VOLTS	$\pm 1\%$
PRIMARY CURRENT	.191	MILLIAMPERES	MAXIMUM
PRIMARY POWER	2.26	WATTS	NOMINAL
IMPEDANCE:			
ZRO	693	OHMS	$\pm 15\%$
ZSS	63	OHMS	NOMINAL
IMPEDANCE ANGLE:			
ZRO	83.2	DEGREES	± 2 DEGREES
ZSS	20	DEGREES	NOMINAL
TRANSFORMATION RATIO	.783 4.4 (LEAD)	----- DEGREES	$\pm 2\%$ ± 0.5
PHASE SHIFT			
D.C. RESISTANCE:	53.6	OHMS	REFERENCE
ROTOR (R1-R2)	52	OHMS	REFERENCE
STATOR (LINE-TO-LINE)	8	MINUTES	MAXIMUM
ELECTRICAL ERROR	100	MILLIVOLTS	MAXIMUM
NULL VOLTAGES:	30	MILLIVOLTS	MAXIMUM
TOTAL	0.5	OZ-IN	MAXIMUM
FUNDAMENTAL	.0008	INCHES	MAXIMUM
FRICITION TORQUE	0.0030	INCHES	$\pm .0020$
RADIAL PLAY	10	DEGREES (C)	MAXIMUM
END PLAY			
TEMPERATURE RISE			

THIS UNIT SHALL NOT BE SUBJECTED TO THE ALTITUDE REQUIREMENTS OF SAE-AS20708.

PART NUMBER: M20708/139 PLUS APPLICABLE DASH NUMBER FROM TABLE 2.

 An SAE International Group	AEROSPACE STANDARD	 AS20708/139 SHEET 3 OF 4	REV. A
	SYNCHRO CONTROL TRANSMITTER, TYPE 31CX6a		