AFCTN Test Report 93-038

AFCTB-ID 93-008

CALS TEST NETWORK

Technical Illustration Transfer

Using:

IGES Data Analysis' Data

MIL-D-28000A (IGES)

Quick Short Test Report

08 February 1993

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Technical Illustration Transfer

Using:
IGES Data Analysis' Data

MIL-D-28000A (IGES)
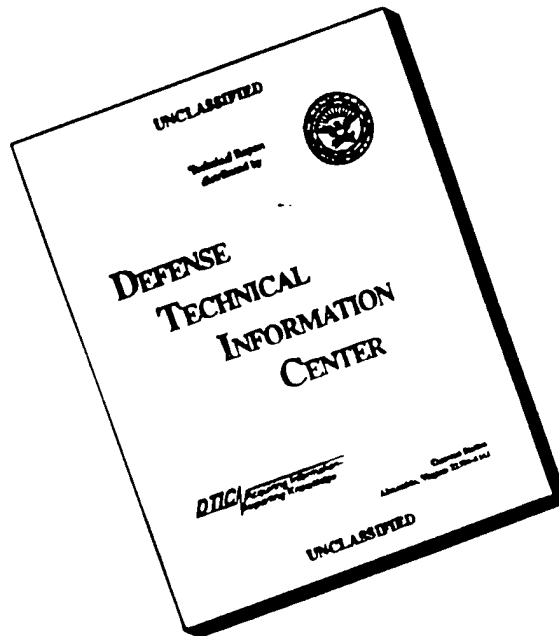
Quick Short Test Report

8 February 1993

Prepared By
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Contents

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was
to analyze IGES Data Analysis's (IDA) interpretation and use
of the CALS standards in transferring technical publication
illustration data. IDA used its CALS Technical Data Inter-
change System to produce data, in accordance with the stan-
dards, and delivered it to the AFCTN technical staff on a
3.5" disk. The stated purpose of the test was to evaluate
IDA's ability to generate valid CGM and IGES files. The
files were not named per MIL-STD-1840A and the Declaration
file or data file headers were not included.

2. Test Parameters

Test Plan: AFCTB 93-008

Date of
Evaluation: 8 February 1993

Evaluators: George Elwood
                                    Air Force CALS Test Bed
                                    Det 2 HQ ESC/ENCP
                                    4027 Colonel Glenn Hwy
                                    Suite 200
                                    Dayton, OH 45431-1672

Data
Originator: Bill Turcotte
                                    IGES Data Analysis
                                    2001 North Janice Ave.
                                    Melrose Park, IL 60160

Data
Description: Technical Manual Test
                                            2 IGES files

Data
Source System:

                     IGES
                            HARDWARE
                                    Unknown
                            SOFTWARE
                                    IGES Data Analysis (IDA) *IGESView*

Evaluation Tools Used:

    MIL-D-28000 (IGES)

        Sun SparcStation 2

            ArborText *iges2draw*
            IDA *Parser/Verifier v92*
            IDA *IGESView v3.05*
            IDA *IGESXpert v1.0*
            Intergraph *I/EMS 02.00.01.11*
            Intergraph *I/CIGES 02.00.01.03*
            International TechneGroup Incorporated
                (ITI) *IGES/Works 1.3*
            Rosetta Technologies *Preview v3.2*

        Cheetah Gold 486

            Autodesk *AutoCAD 386 R12*
            Micro Engineering Solutions
                (MES) *CheckMark 1.0*
            Cadkey *Cadkey v5.02*
            IDA *IGES Parser/Verifier v92*
            Wiz Worx *IGESDRAW*

Standards
Tested:
        MIL-STD-1840A
        MIL-D-28000A

3. 1840A Analysis

3.1 External Packaging

The 3.5" disk arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a commercial mail envelope. The exterior of the envelope was marked with the magnetic media warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The 3.5" disk was not enclosed in a static carrier as required by MIL-STD-1840A, para. 5.3.1.2. Enclosed in the envelope was a packing list showing all files recorded on the 3.5" disk.

3.2 Transmission Envelope

The 3.5" disk received by the AFCTB contained DOS files. The files were not named per the standard conventions.

3.2.1 Tape Formats

The files were received on a 3.5" disk.

3.2.2 Declaration and Header Fields

The 3.5" disk did not have the required Document Declaration file or data file headers. A 3.5" disk with the correct format will be returned to IDA.

4. IGES Analysis

The tape contained two IGES Class I files. Both files were evaluated using IDA's *Parser/Verifier* with CALS Options. No errors were reported in either file. The files were visually inspected for the required CALS statement which was found.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement. All operations were performed using the default settings.

The IGES files were converted using AutoDesk's *AutoCAD R12* with IGES translator 5.1. The translator log noted many errors during this process. Most of the reported errors were "point not on conic" or "radius not correct." Part of the log file is included in the Appendix of this report. Both files displayed correctly on the screen. Hard copies were not provided due to a network problem.

The files were converted using Cadkey's *Cadkey* IGES translator with no reported errors. The resulting files were read into *Cadkey v4.06* and displayed. Both files displayed with two images. File igiges1 displayed the images on top of one another. File igiges2 displayed them side-by-side. This problem was traced to the use of a 410 entity. This view entity was displayed on level 241 in Cadkey.

The files were read into MES' *CheckMark* without reported error. The images appeared to be correct.

The files were converted using ArborText's *iges2draw* utility without a reported error. The resulting files were then read into Island Graphics' *IslandDraw*. File igiges1 had many noticeable errors that related to fonts. Part of the text was also outside the boundaries of the frame. File igiges2 appeared to be correct.

The files were read using IDA's *IGESView* without a reported problem. The images appeared to be complete and correct. It was noted that the circle in the ISO view of file igigies1 is made up of line segments.

The files were read into ITI's *IGESWorks* without a reported error. The images displayed correctly on the screen without noticeable errors.

The files were converted using Rosetta Technologies' *Prepare* and then displayed using *Preview*. No problems were encountered.

The files were then read into the Wiz Worx *IGESDRAW* utility and printed. No problems were encountered during this procedure.

The IGES files meet the CALS MIL-D-28000A specification.

5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were on this 3.5" disk.

6. Raster Analysis

No Raster files were on the 3.5" disk.

7. CGM Analysis

No Computer Graphics Metafile (CGM) files were on the 3.5" disk.

8. Conclusions and Recommendations

In summary, the physical structure of the 3.5" disk from IDA does not meet the CALS standards, due to the missing Document Declaration file and data file header records.

The two IGES files meet the CALS MIL-D-28000A specification.

The 3.5" disk does not meet the CALS MIL-STD-1840A requirements, due to the problems in the physical structure.

9. Appendix A - Detailed IGES Analysis

9.1 File igiges1

9.1.1 Parser/Verifier Log

```
        *** IGES DATA FILE ANALYSIS ***
        ***         MARCH 1992        ***
        ***    IGES Data Analysis     ***
        ***       (708) 449-3430      ***

  Input file is \9308\igiges1.igs

  Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

  Today is February 8, 1993  7:25 AM

*** File and Product Name Information ***

   File name from sender    = 'igiges1.igs'
   File creation Date.Time   = '930201.092927'
   Model change Date.Time    = ''
   Author                   = 'J.R.TERRY'
   Department               = 'MARTIN MARIETTA ENERGY SYSTEMS, INC.'
   Product name from sender = '/ida/igesfiles/autofact7.igs'
   Destination product name = 'AUTOFACT VII'

*** Parameter Delimiters ***

   Delimiter  = ','
   Terminator = ';'

*** Originating System Data ***

   System ID             = 'IGES Data Analysis - igiges'
   Preprocessor version  = 'igiges Version 2.0'
   Specification version = 6 (IGES 4.0)

*** Precision levels ***
   Integer bits =    32
   Floating point   -  Exponent =    308  Mantissa =    15
   Double precision - Exponent =    308  Mantissa =    15

*** Global Model Data ***
```

```
Model scale             =  1.0000E+000
Unit flag               =  1
Units                   =  'INCH'
Line weights            =  128
Maximum line thickness  =  1.000000E+000
Minimum line thickness  =  7.812500E-003
Granularity             =  1.000000E-004
Maximum coordinate      =  4.482800E+001
```

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	983
	Blanked	0
Independence:	Independent	981
	Physically Subordinate	0
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	1
	Annotation	982
	Definition	0
	Other	0
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	983
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
100	0	0	25	Circular arc
104	1	0	67	Conic arc - ellipse
106	11	0	141	Copious data - Piecewise planar, linear string(2D path)
110	0	0	501	Line
124	0	0	67	Transformation matrix

```
212        0        0      179     General note
404        0        0        1     Drawing
406       16        0        1     Property - Drawing size
410        0        0        1     View - Orthographic parallel
```

*** Entity Count by Level ***

```
Level   Count
    0    983
```

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled   983

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
25	-	67	140	-	481	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	1	-	16	-	-	Phantom
-	-	-	-	-	4	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

116	118	120	122	124	125	126	128	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	67	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

130	132	134	136	138	140	142	144	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted

--- --- --- --- --- --- --- --- User defined

*** Line Widths Used in Data ***

     Weight   Count   Width

 Defaulted   983   (0.0078)

*** Colors Used in Data ***

 Defaulted   3
    Black   980


```
******************************
******  ENTITY ANALYSIS  ******
******************************
```

*** Entity type: 100

*** Entity type: 104

*** Entity type: 106

*** Entity type: 110

  --   501 lines averaging 1.247255E+000 units --

*** Entity type: 124

67 transformation matrices, 67 non-zero translations.
ERROR   2341: Unknown Message number.

*** Entity type: 212

     179 text strings in data file.
     Average text aspect ratio in file is 1.0019850.
     Minimum text aspect ratio in file is 0.5600000.
     Maximum text aspect ratio in file is 1.3707853.

     FONTS USED IN FILE

     FONT   COUNT   NAME

```
        1      157    Default ASCII Style
     1001       16    Symbol Font 1
     1002        6    Symbol Font 2
```

*** Entity type: 404

Drawing at D   5 contains 1 views.
Drawing at D   5 contains 0 annotation entities.

*** Entity type: 406

*** Entity type: 410

Scale of view at D   1 is 1.000000E+000.
Orthographic View entity at D   1 has 0 clipping planes specified.
   XMIN = Not Set   XMAX = Not Set
   YMIN = Not Set   YMAX = Not Set
   ZMIN = Not Set   ZMAX = Not Set

*** Message Summary ***

*** Error Summary ***

    0 fatal errors
    0 severe errors
    1 errors
    0 warnings
    0 cautions
    0 nitpicks
    0 notes

*** End of Analysis of \9308\igiges1.igs ***

9.1.2 AutoCAD Log

```
Title: IGESIN Journal (v5.1 Nov 05 1992)
=====================================================================
File: I:\9308\IGIGES1.xli
Date: Mon, Feb 08, 1993
Time: 08:03:53
=====================================================================

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N:   117-10075750
Translating from IGES file:       I:\9308\IGIGES1.IGS
         to AutoCAD Drawing:      UNNAMED.dwg


=====================================================================

Options obtained from:  default settings

Curves Approximated to Tolerance of          0.01

Surfaces Approximated to Tolerance of        0.01

Text Font/Style mapping:
IGES Text font        Style Name        ACAD Font
        0                SYMBOL0           iges0
        1                STANDARD           txt
        2                LEROY              txt
        3                FUTURA             txt
        6                COMP80             txt
       12                GOTHICE          gothice
       13                GOTHICI          gothici
       14                ROMANS            romans
       17                ROMANT            romant
       18                ROMAND            romand
       19                OCR                txt
     1001                SYMBOL1          iges1001
     1002                SYMBOL2          iges1002
     1003                SYMBOL3          iges1003
     2001                KANJI            bigfont

IGES Linefont/AutoCAD Linetype mapping
IGES Line Font        AutoCAD linetype        Shape file
        0                BYLAYER
        1                CONTINUOUS
```

2	DASHED	acad.lin
3	PHANTOM	acad.lin
4	CENTER	acad.lin
5	DOT	acad.lin

==

Parse phase

*** Warning (IAFP__LARGER_SGL_EXP) ***
IGIGES1.IGS, line 9: IGES file contains numbers with a larger single precision exponent than what is allowed on this system.

*** Warning (IAFP__LARGER_SGL_SIG) ***
IGIGES1.IGS, line 9: IGES file has greater number of significant digits in single precision numbers than this system.

*** Warning (IEVM_RADII_NOT_EQUAL_100) ***
(DE 905, TF 100:0) Entity's radii are not equal. Start point radius: 1.4346400e+000. Terminate point radius: 1.4346467e+000.

Action taken: Start point moved 3.3583956e-006 units from 2.1994640e+001, 7.9230000e+000 to 2.1994643e+001, 7.9230000e+000. Terminate point moved 3.3583956e-006 units from 2.1938040e+001, 8.3220200e+000 to 2.1938037e+001, 8.3220191e+000.

*** Warning (IEVM_RADII_NOT_EQUAL_100) ***
(DE 911, TF 100:0) Entity's radii are not equal. Start point radius: 1.4346421e+000. Terminate point radius: 1.4346489e+000.

Action taken: Start point moved 3.4182660e-006 units from 2.1812830e+001, 8.6220100e+000 to 2.1812833e+001, 8.6220117e+000. Terminate point moved 3.4182660e-006 units from 2.1574450e+001, 8.9374500e+000 to 2.1574448e+001, 8.9374476e+000.

<<<<< *PART OF LOG REMOVED HERE* >>>>>

*** Warning (IEVM_BAD_VECTOR_124) ***
(DE 1441, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

*** Warning (IEVM_BAD_END_POINT_104) ***
(DE 1443, TF 104:1) Entity's End Point not on the conic. Value found was -6.4321000e-001, 4.9873000e-001.

Action taken: End point moved 1.1087014e-005 units, from -6.4321000e-001, 4.9873000e-001 to -6.4322109e-001, 4.9873000e-001.

*** Warning (IEVM_BAD_VECTOR_124) ***
(DE 1445, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

<<<<< *PART OF LOG REMOVED HERE* >>>>>

*** Warning (IEVM_BAD_VECTOR_124) ***
(DE 1641, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

==
Start Section:

CONFORMANCE:
   This IGES file conforms to CALS Class 1, Technical Illustrations,
   of MIL-D-28000A (Feb 10, 1992).

Global Section:

Parameter Delimiter:	,
Record Delimiter:	;
Sending Product ID:	/ida/igesfiles/autofact7.igs
File Name:	igiges1.igs
System ID:	IGES Data Analysis - igiges
Preprocessor Version:	igiges Version 2.0
Size of Integer:	32
Sgl. Precision Mag:	308
Sgl. Precision Sig:	15
Dbl. Precision Mag:	308
Dbl. Precision Sig:	15
Receiving Product ID:	AUTOFACT VII
Model Space Scale:	1.000000
Unit Flag:	1
Unit String:	INCH
# of Line Weights:	128
Maximum Line Width:	1.000000
Creation Date:	02/01/93 09:29:27
Minimum Resolution:	0.000100
Maximum Coordinate:	44.828000

Author: J.R.TERRY
Organization: MARTIN MARIETTA ENERGY SYSTEMS, INC.
IGES Version Number: 6
Drafting Standard: 0

Entity Summary:

Type	Form	Description	Count
100	0	Circular Arc	25
104.	1	Ellipse	67
106	11	Planar Piecewise Linear Curve	141
110	0	Line	501
124	0	Transformation Matrix	67
212	0	General Note (Simple)	179
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
		Total	983

===

===

Translation phase

Drawing Entity (404 Form 0) at DE 5, with
    name = ,
    size = 45.656000, 35.256000,
    units = IN,
was processed in the AutoCAD drawing file: C:\UNNAMED.dwg

*** Warning (ACAD_NEW_VIEW_VOLUME_GENERATED) ***
(DE: 1 TF: 410:0)
A new view volume has been generated for the view with:
 XMIN (-5.496548), XMAX (49.496548),
 YMIN (-5.496548), YMAX (39.496548),
 ZMIN (-5.546548), ZMAX (5.546548).

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
100	0	Circular Arc	25	25	0

104	1 Ellipse	67	67	0
106	11 Planar Piecewise Linear Curve	141	141	0
110	0 Line	501	501	0
212	0 General Note (Simple)	179	179	0
404	0 Drawing (form 0)	1	1	0
406	16 Property (Drawing Size)	1	1	0
410	0 View	1	1	0
		=====	=========	======
Totals		916	916	0

AutoCAD Entity Summary

Entity	Created	Errors
LINE	507	0
CIRCLE	5	0
TEXT	179	0
ARC	20	0
POLYLINE	202	0
Totals	=======	======
	913	0

Error Summary:

The following message was issued 1 time(s)
IGES file contains numbers with a larger single precision exponent than what is allowed on this system.

The following message was issued 1 time(s)
IGES file has greater number of significant digits in single precision numbers than this system.

The following message was issued 5 time(s)
Entity's radii are not equal. Start point radius: %.7e. Terminate point radius: %.7e.

The following message was issued 41 time(s)
Entity's start point not on the conic. Value found was %.7e, %.7e.

The following message was issued 42 time(s)
Entity's End Point not on the conic. Value found was %.7e, %.7e.

The following message was issued 50 time(s)
Entity has a column which is not a unit vector.

The following message was issued 1 time(s)
A new view volume has been generated for the view with:
 XMIN (%lf), XMAX (%lf),
 YMIN (%lf), YMAX (%lf),
 ZMIN (%lf), ZMAX (%lf).

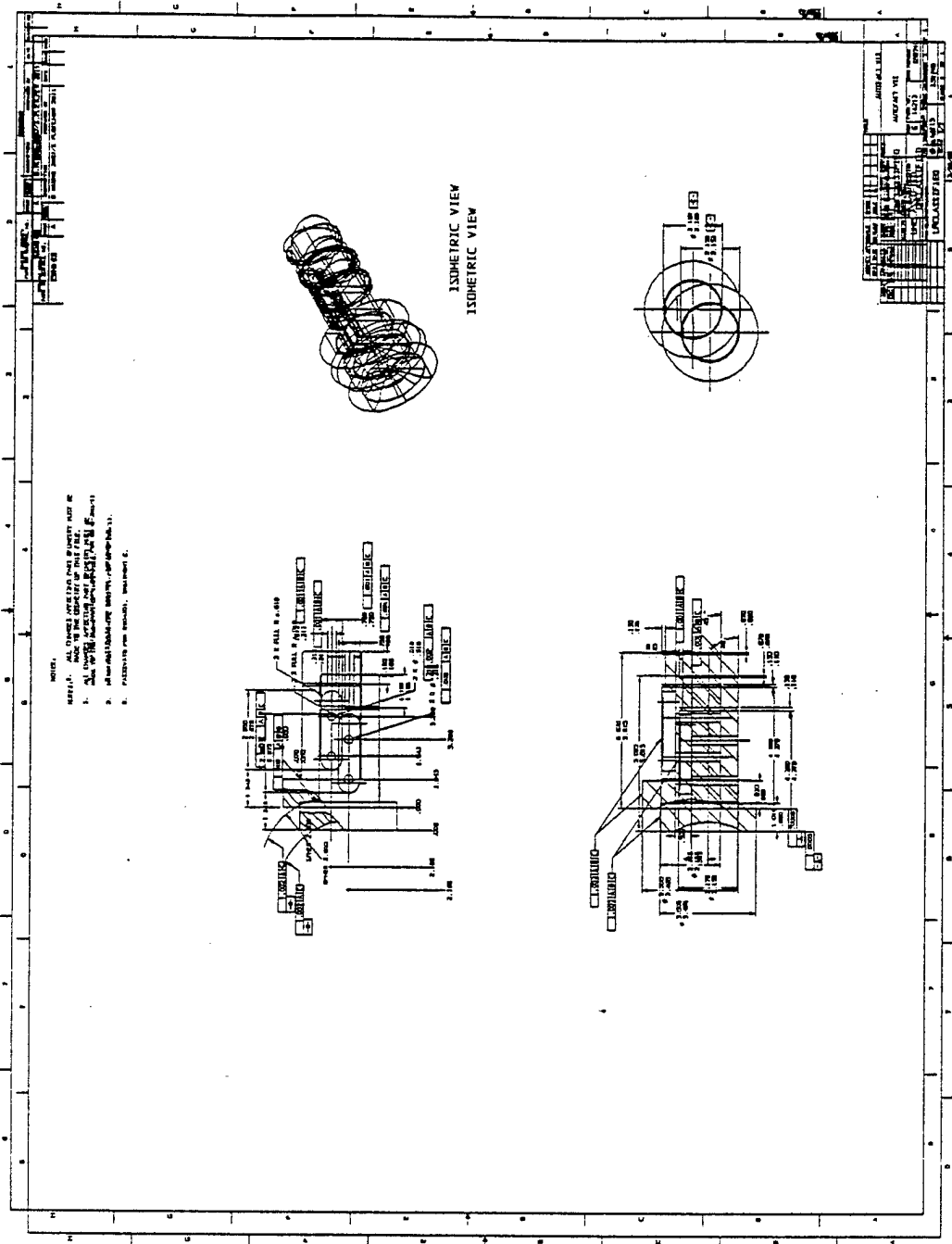Status: 0
Warning: 141
Error: 0
Fatal: 0

Elapsed Time:

Processor: 00:00:59
Clock: 00:00:59
===

9.1.3 Output Cadkey v4.06

9.1.4 Output CheckMark v1.00

ISOMETRIC VIEW

9.1.5 Output IGESView

ISOMETRIC VIEW
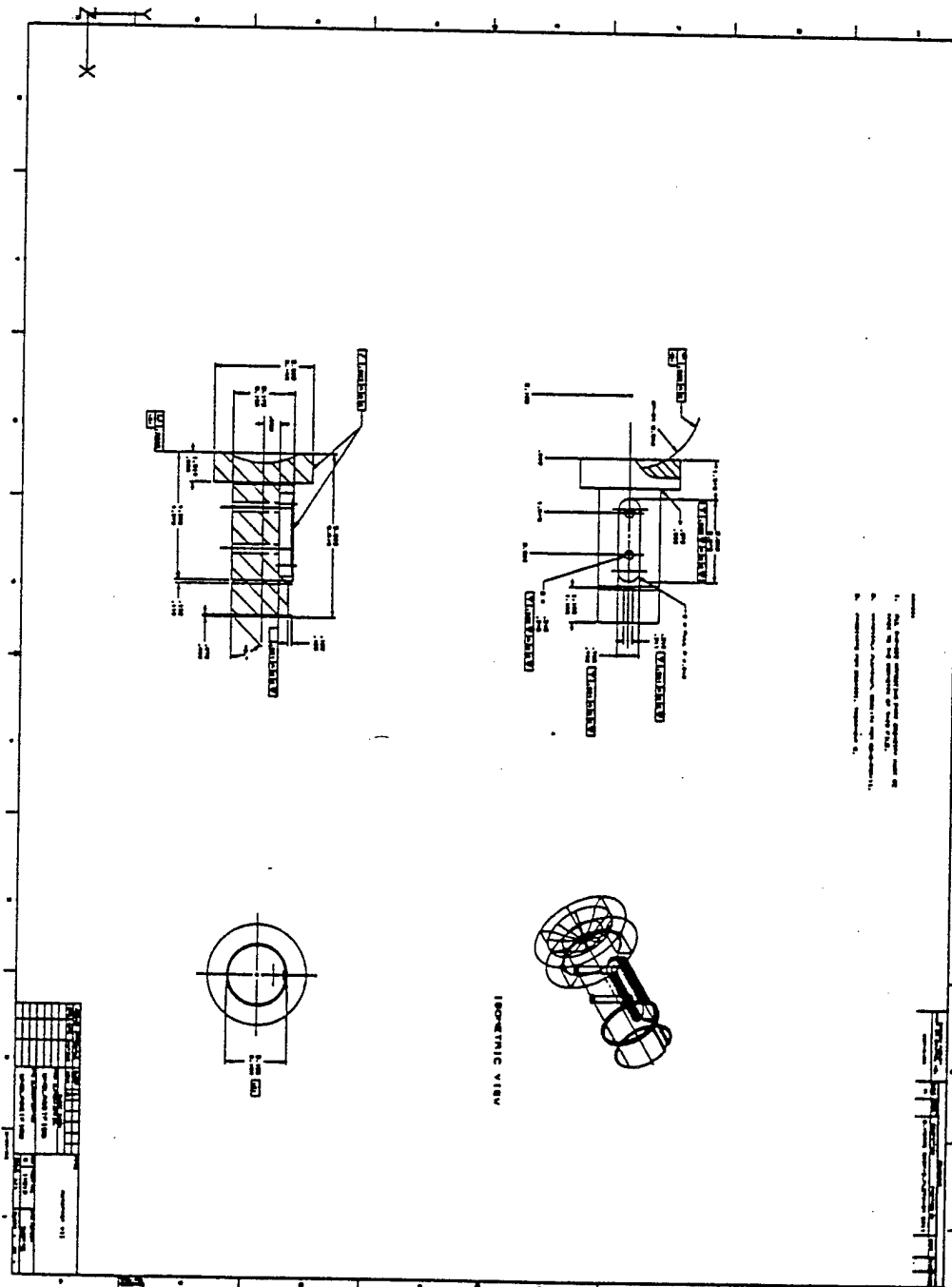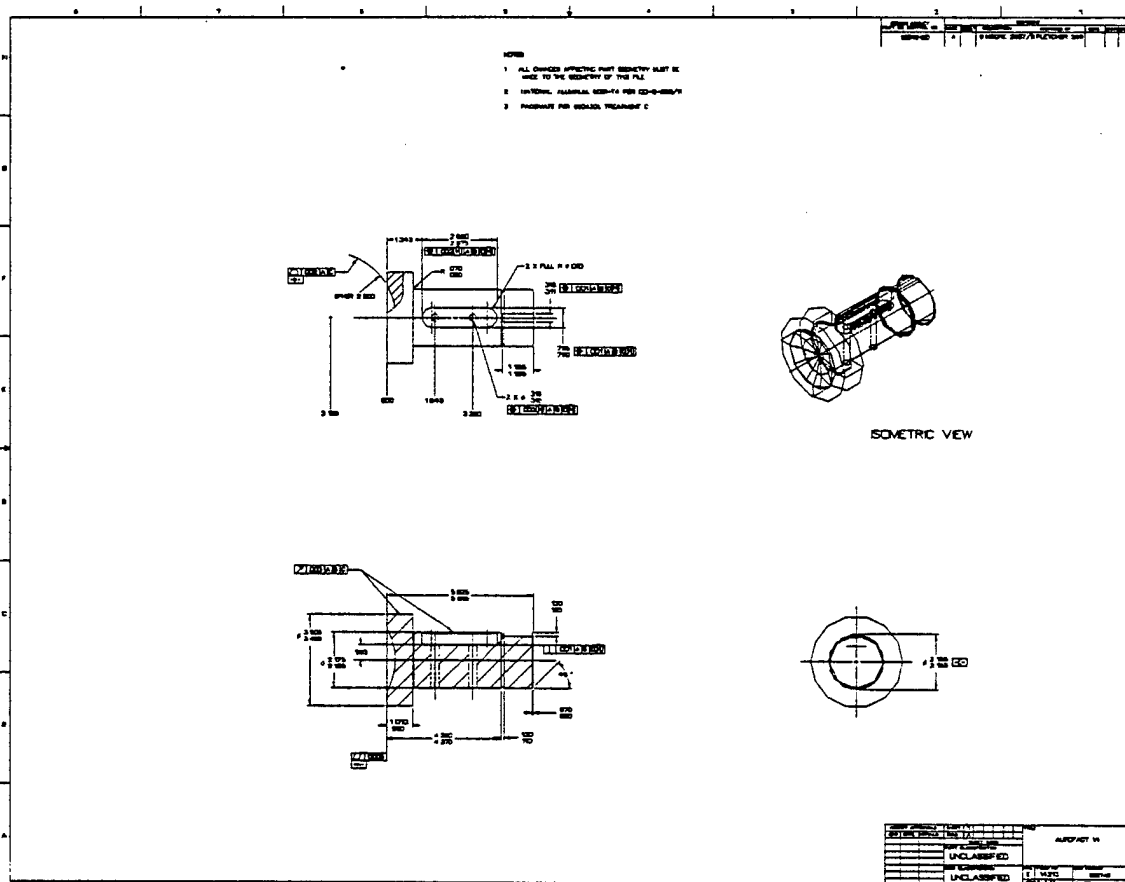
9.1.6   Output iges2draw/IslandDraw

9.1.7 Output IGESWork
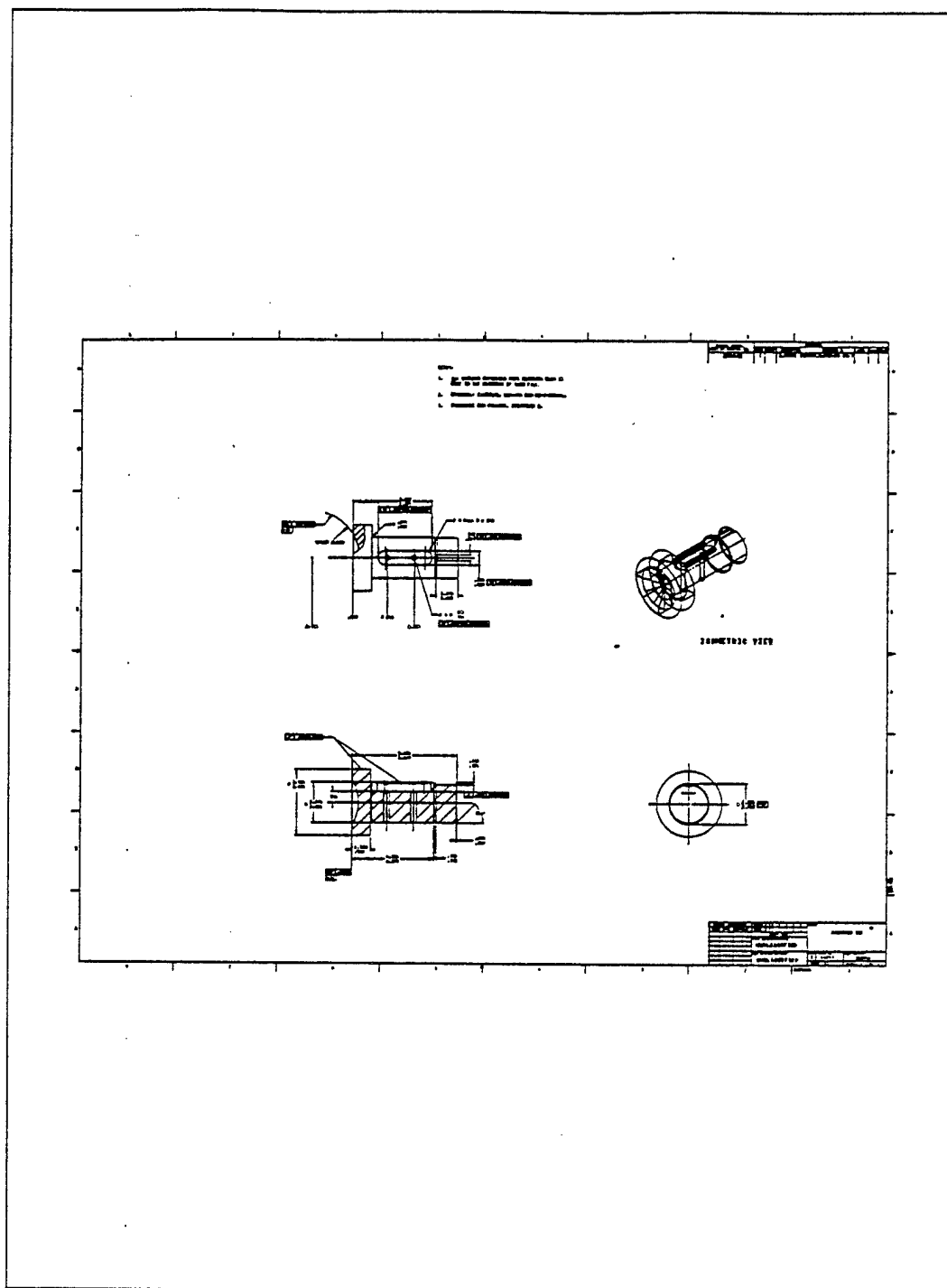
9.1.8 Output Preview
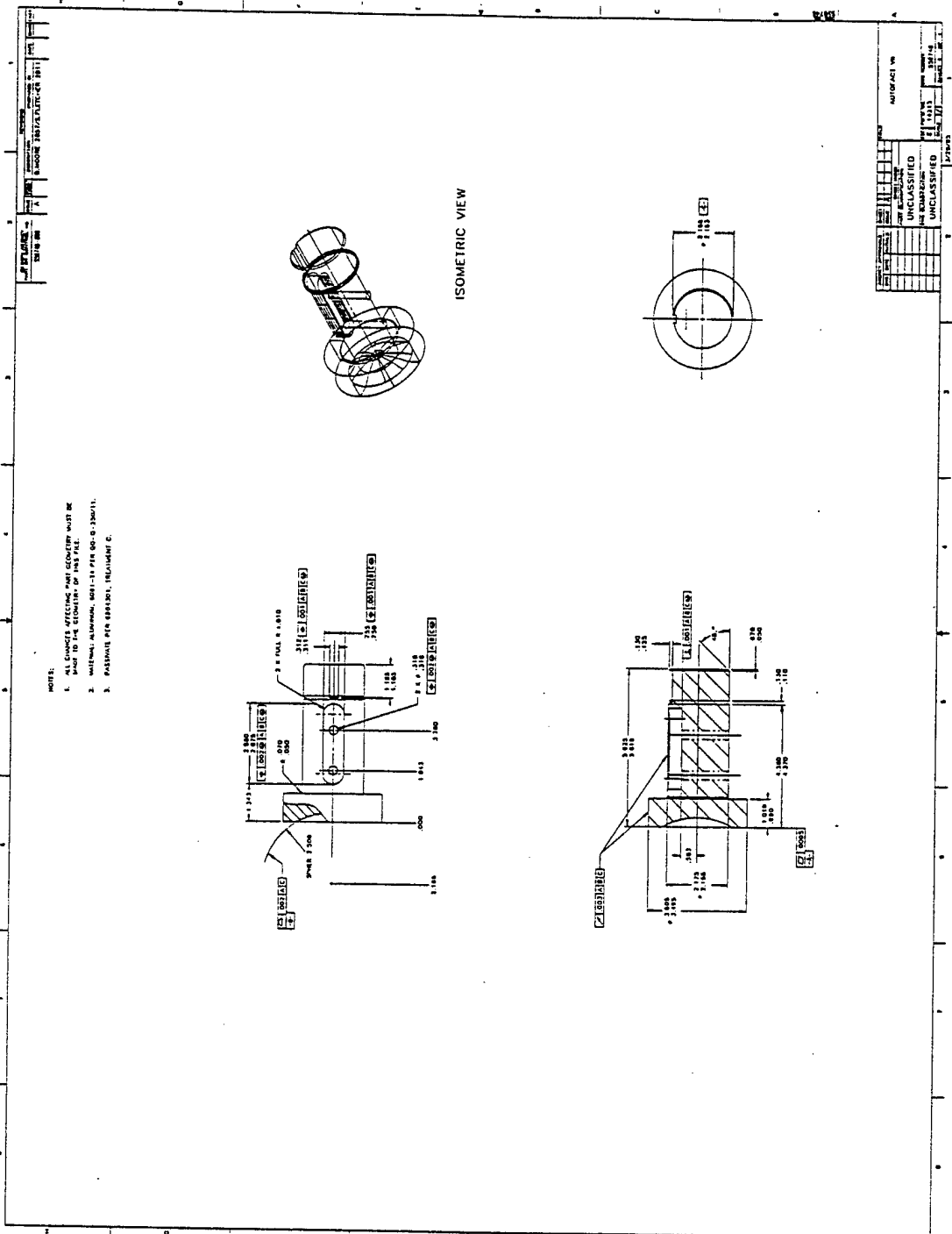
ISOMETRIC VIEW

NOTES:
1. ALL CHANGES AFFECTING PART GEOMETRY MUST BE MADE TO THE GEOMETRY OF THIS FILE.
2. MATERIAL: ALUMINUM, 6061-T6 PER QQ-A-250/11.
3. PASSIVATE PER 6000301, TREATMENT C.

9.1.9   Output Wiz Worx IGESDRAW
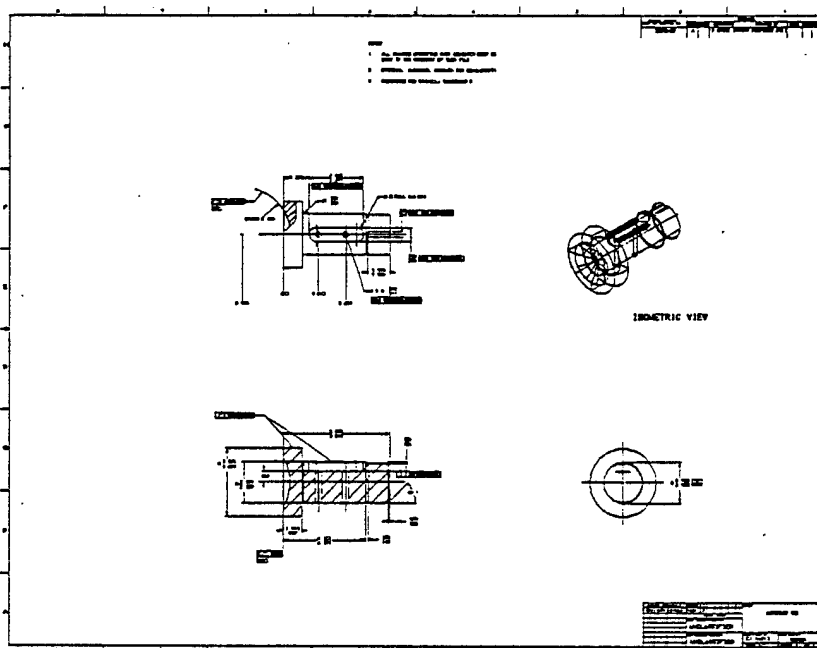
\9308\IGIGES1

9.2   File igiges2

9.2.1   Parser/Verifier Log

```
        ***  IGES DATA FILE ANALYSIS  ***
        ***          MARCH 1992        ***
        ***    IGES Data Analysis      ***
        ***        (708) 449-3430      ***

 Input file is \9308\igiges2.igs

 Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

 Today is February 8, 1993   7:25 AM

*** File and Product Name Information ***

    File name from sender    = 'igiges2.igs'
    File creation Date.Time   = '930201.093025'
    Model change Date.Time    = ''
    Author                    = ''
    Department                = ''
    Product name from sender = '/ida/igesfiles/clean.igs'
    Destination product name = ''

*** Parameter Delimiters ***

    Delimiter  = ','
    Terminator = ';'

*** Originating System Data ***

    System ID             = 'IGES Data Analysis - igiges'
    Preprocessor version  = 'igiges Version 2.0'
    Specification version = 6 (IGES 4.0)

*** Precision levels ***
    Integer bits =    32
    Floating point  -  Exponent =   308   Mantissa =    15
    Double precision - Exponent =   308   Mantissa =    15

*** Global Model Data ***

    Model scale            = 1.0000E+000
    Unit flag              = 1
```
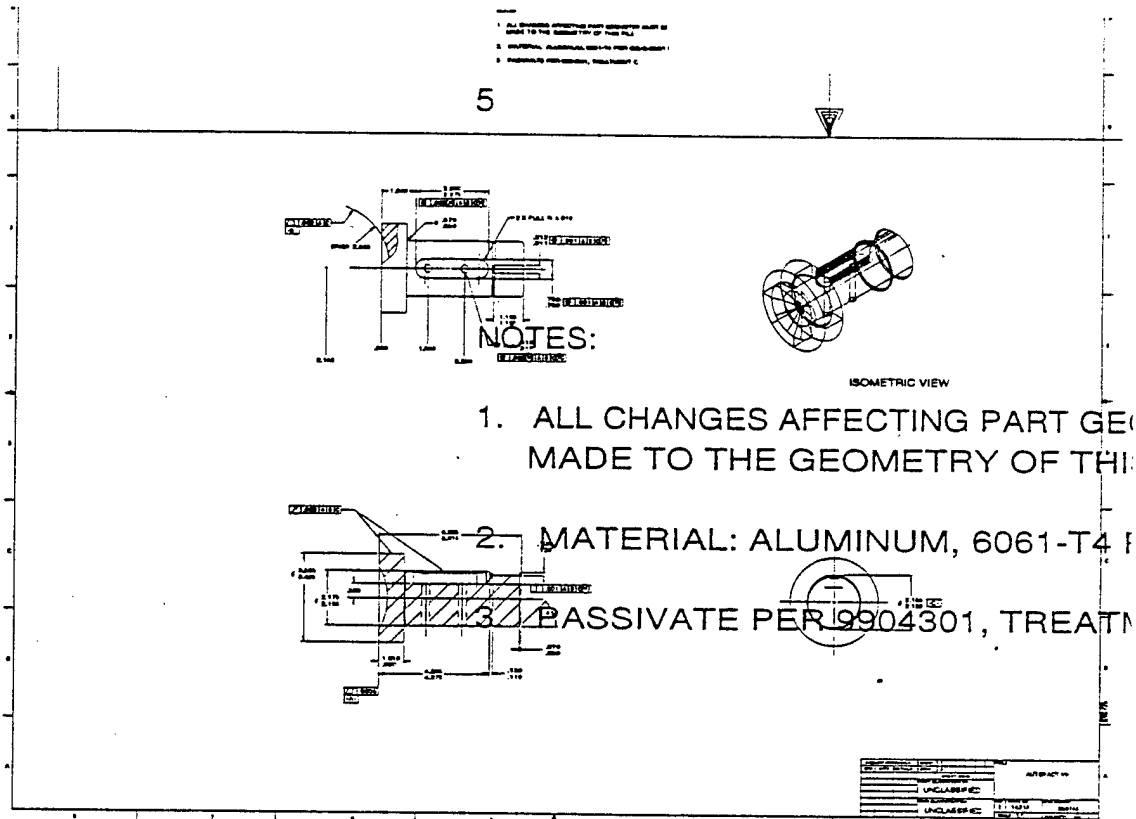
```
Units                   = 'INCH'
Line weights            = 2500
Maximum line thickness  = 2.500000E+000
Minimum line thickness  = 1.000000E-003
Granularity             = 1.000000E-004
Maximum coordinate      = 4.386000E+001
```

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	868
	Blanked	0
Independence:	Independent	866
	Physically Subordinate	0
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	1
	Annotation	867
	Definition	0
	Other	0
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	868
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
100	0	0	196	Circular arc
104	1	0	36	Conic arc - ellipse
106	11	0	67	Copious data - Piecewise planar, linear string(2D path)
110	0	0	492	Line
124	0	0	36	Transformation matrix
212	0	0	38	General note
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size

```
    410        0        0        1     View - Orthographic parallel
```

*** Entity Count by Level ***

```
   Level  Count
       0    868
```

*** Labeling Information ***

   0% of the entities are labeled.

   Unlabeled   868

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
194	-	36	67	-	389	-	-	Solid
1	-	-	-	-	8	-	-	Dashed
1	-	-	-	-	13	-	-	Phantom
-	-	-	-	-	82	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

116	118	120	122	124	125	126	128	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	36	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

130	132	134	136	138	140	142	144	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	221	(0.0010)
14	510	(0.0140)
12	137	(0.0120)

*** Colors Used in Data ***

Defaulted	3
Black	865

```
*******************************
******  ENTITY ANALYSIS  ******
*******************************
```

*** Entity type: 100

*** Entity type: 104

*** Entity type: 106

*** Entity type: 110

  --   492 lines averaging 1.133502E+000 units --

*** Entity type: 124

36 transformation matrices, 36 non-zero translations.
ERROR   2341: Unknown Message number.

*** Entity type: 212

        38 text strings in data file.
        Average text aspect ratio in file is 0.9141814.
        Minimum text aspect ratio in file is 0.8648532.
        Maximum text aspect ratio in file is 0.9740260.

        FONTS USED IN FILE

        FONT   COUNT   NAME

```
       1       35    Default ASCII Style
    1002        3    Symbol Font 2
```

*** Entity type: 404

Drawing at D   5 contains 1 views.
Drawing at D   5 contains 0 annotation entities.

 *** Entity type: 406

*** Entity type: 410

  Scale of view at D   1 is 1.000000E+000.
Orthographic View entity at D   1 has 0 clipping planes specified.
   XMIN = Not Set   XMAX = Not Set
   YMIN = Not Set   YMAX = Not Set
   ZMIN = Not Set   ZMAX = Not Set

 *** Message Summary ***

 *** Error Summary ***

    0 fatal errors
    0 severe errors
    1 errors
    0 warnings
    0 cautions
    0 nitpicks
    0 notes

 *** End of Analysis of \9308\igiges2.igs ***

9.2.2 AutoCAD Log

```
Title: IGESIN Journal (v5.1 Nov 05 1992)
=================================================================================
File: I:\9308\IGIGES2.xli
Date: Mon, Feb 08, 1993
Time: 08:11:42
=================================================================================

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N:    117-10075750
Translating from IGES file:        I:\9308\IGIGES2.IGS
         to AutoCAD Drawing:       IDA2.dwg



=================================================================================

Options obtained from:   default settings

Curves Approximated to Tolerance of          0.01

Surfaces Approximated to Tolerance of         0.01

Text Font/Style mapping:
IGES Text font        Style Name         ACAD Font
        0                 SYMBOL0            iges0
        1                 STANDARD            txt
        2                 LEROY              txt
        3                 FUTURA             txt
        6                 COMP80             txt
       12                 GOTHICE          gothice
       13                 GOTHICI          gothici
       14                 ROMANS            romans
       17                 ROMANT            romant
       18                 ROMAND            romand
       19                 OCR                txt
     1001                 SYMBOL1          iges1001
     1002                 SYMBOL2          iges1002
     1003                 SYMBOL3          iges1003
     2001                 KANJI            bigfont

IGES Linefont/AutoCAD Linetype mapping
IGES Line Font        AutoCAD linetype         Shape file
        0                 BYLAYER
        1                 CONTINUOUS
```

2	DASHED	acad.lin
3	PHANTOM	acad.lin
4	CENTER	acad.lin
5	DOT	acad.lin

==

Parse phase

*** Warning (IAFP__LARGER_SGL_EXP) ***
IGIGES2.IGS, line 8: IGES file contains numbers with a larger single precision
exponent than what is allowed on this system.

*** Warning (IAFP__LARGER_SGL_SIG) ***
IGIGES2.IGS, line 8: IGES file has greater number of significant digits in
single precision numbers than this system.

*** Warning (IEVM_BAD_START_POINT_104) ***
(DE 593, TF 104:1) Entity's start point not on the conic. Value found was
-2.5696000e-001, 3.8890000e-002.

Action taken: Start point moved 2.3669983e-006 units, from -2.5696000e-001,
3.8890000e-002 to -2.5696237e-001, 3.8890000e-002.

<<<<< *PART OF LOG RMEOVED HERE* >>>>>

*** Warning (IEVM_BAD_VECTOR_124) ***
(DE 603, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

<<<<< *PART OF LOG RMEOVED HERE* >>>>>

*** Warning (IEVM_BAD_VECTOR_124) ***
(DE 1571, TF 124:0) Entity has a column which is not a unit vector.

Action taken: Unitized all vectors.

==
Start Section:

CONFORMANCE:
  This IGES file conforms to CALS Class 1, Technical Illustrations,
  of MIL-D-28000A (Feb 10, 1992).

Global Section:

```
Parameter Delimiter:        ,
Record Delimiter:           ;
Sending Product ID:         /ida/igesfiles/clean.igs
File Name:                  igiges2.igs
System ID:                  IGES Data Analysis - igiges
Preprocessor Version:       igiges Version 2.0
Size of Integer:            32
Sgl. Precision Mag:         308
Sgl. Precision Sig:         15
Dbl. Precision Mag:         308
Dbl. Precision Sig:         15
Receiving Product ID:
Model Space Scale:          1.000000
Unit Flag:                  1
Unit String:                INCH
# of Line Weights:          2500
Maximum Line Width:         2.500000
Creation Date:              02/01/93 09:30:25
Minimum Resolution:         0.000100
Maximum Coordinate:         43.860000
Author:
Organization:
IGES Version Number:        6
Drafting Standard:          0
```

Entity Summary:

Type	Form	Description	Count
100	0	Circular Arc	196
104	1	Ellipse	36
106	11	Planar Piecewise Linear Curve	67
110	0	Line	492
124	0	Transformation Matrix	36
212	0	General Note (Simple)	38
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
		Total	**868**

===

Translation phase

Drawing Entity (404 Form 0) at DE 5, with
    name = ,
    size = 44.720000, 34.320000,
    units = IN,
was processed in the AutoCAD drawing file: C:\IDA2.dwg

*** Warning (ACAD_NEW_VIEW_VOLUME_GENERATED) ***
(DE: 1 TF: 410:0)
A new view volume has been generated for the view with:
 XMIN (-48.420332), XMAX (5.420332),
 YMIN (-5.420332), YMAX (38.420332),
 ZMIN (-5.420332), ZMAX (5.420332).

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
100	0	Circular Arc	196	196	0
104	1	Ellipse	36	36	0
106	11	Planar Piecewise Linear Curve	67	67	0
110	0	Line	492	492	0
212	0	General Note (Simple)	38	38	0
404	0	Drawing (form 0)	1	1	0
406	16	Property (Drawing Size)	1	1	0
410	0	View	1	1	0
Totals			832	832	0

AutoCAD Entity Summary

Entity	Created	Errors
LINE	497	0
CIRCLE	44	0
TEXT	38	0
ARC	152	0
POLYLINE	98	0
Totals	829	0

```
================================================================================
Error Summary:

The following message was issued 1 time(s)
IGES file contains numbers with a larger single precision exponent than what is
allowed on this system.

The following message was issued 1 time(s)
IGES file has greater number of significant digits in single precision numbers
than this system.

The following message was issued 135 time(s)
Entity's radii are not equal.  Start point radius: %.7e.  Terminate point
radius: %.7e.

The following message was issued 18 time(s)
Entity's start point not on the conic.  Value found was %.7e, %.7e.

The following message was issued 21 time(s)
Entity's End Point not on the conic.  Value found was %.7e, %.7e.

The following message was issued 13 time(s)
Entity has a column which is not a unit vector.

The following message was issued 1 time(s)
A new view volume has been generated for the view with:
 XMIN (%lf), XMAX (%lf),
 YMIN (%lf), YMAX (%lf),
 ZMIN (%lf), ZMAX (%lf).

Status:  0
Warning: 190
Error:  0
Fatal:  0

Elapsed Time:

Processor: 00:00:45
Clock:     00:00:46
================================================================================
```
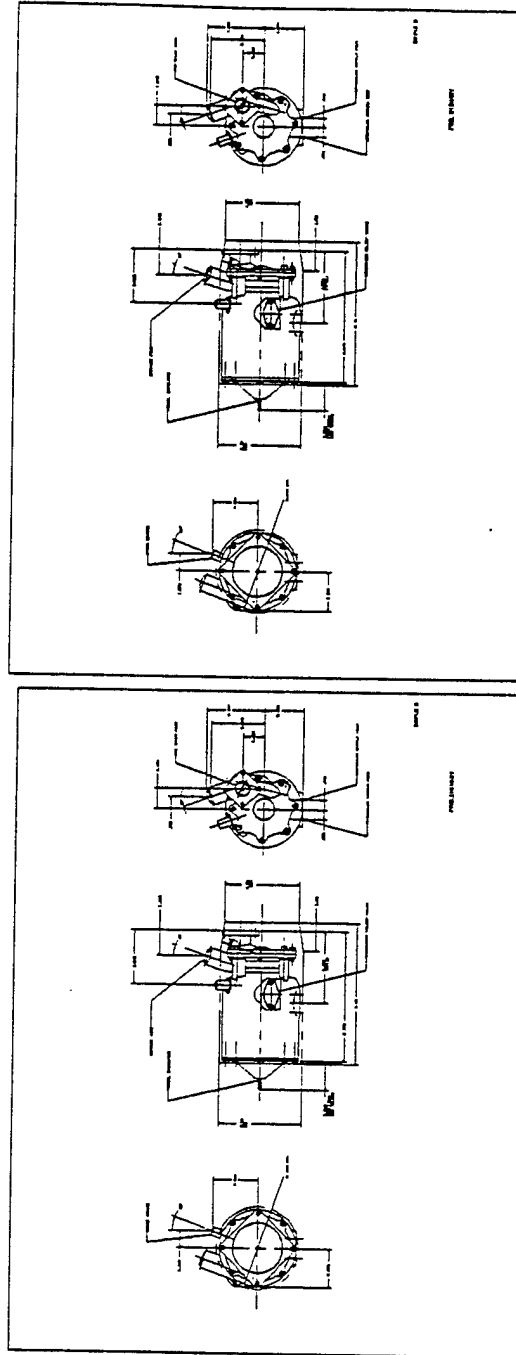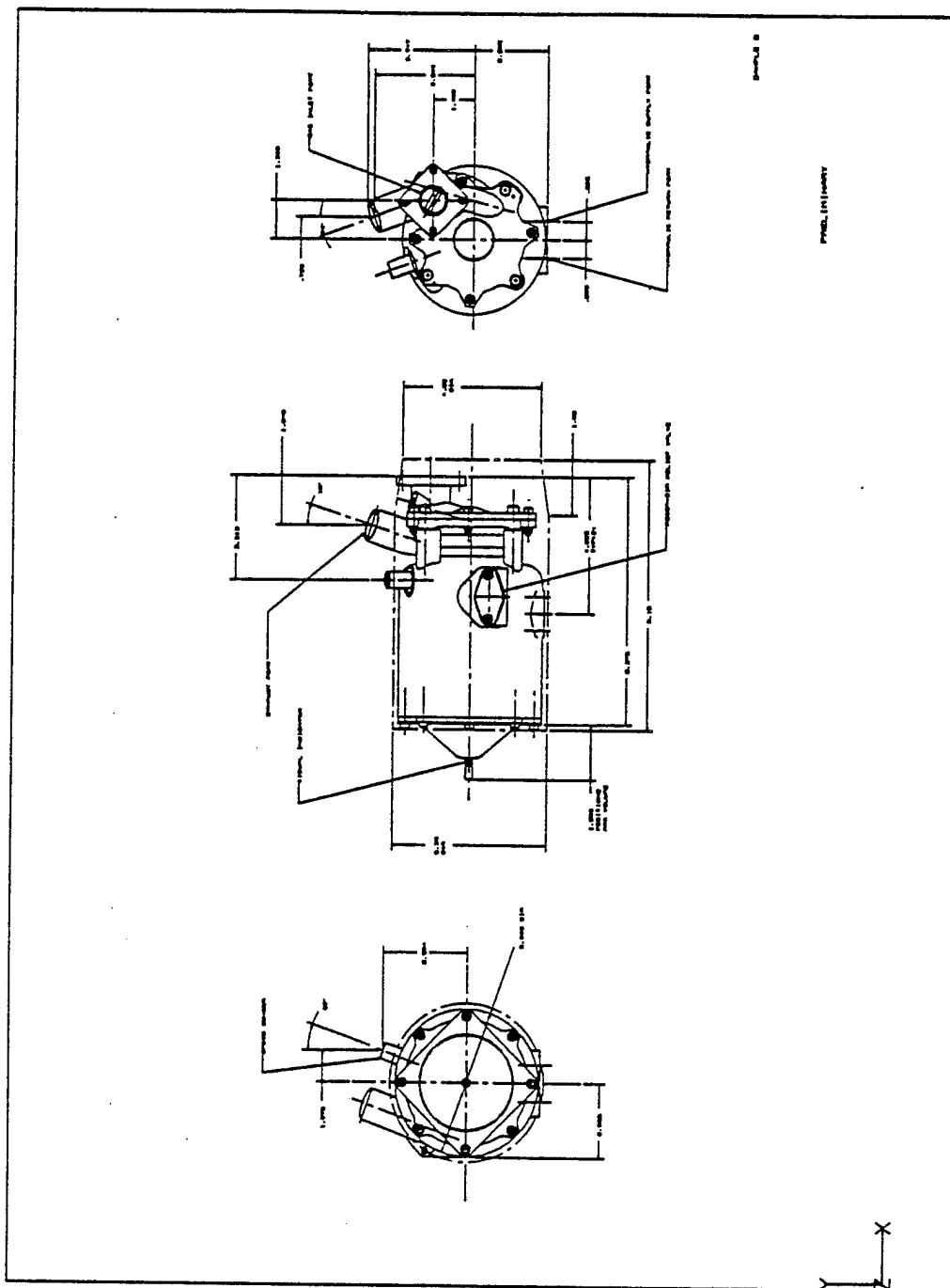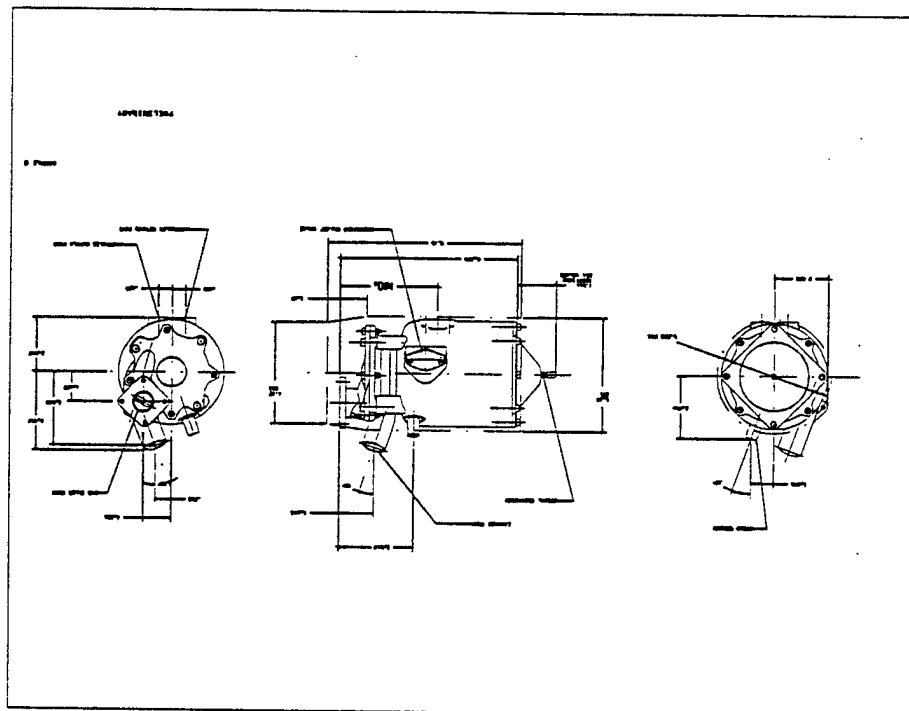
9.2.5 Output IGESView

9.2.6 Output iges2draw/IslandDraw

9.2.7   Output IGESWorks

9.2.8 Output Preview

9.2.9 Output Wiz Worx IGESDRAW

\9308\IGIGES2