



# NATIONAL AEROSPACE STANDARD

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## INACTIVE FOR DESIGN AFTER 29 JUNE 2012

FED. SUPPLY CLASS

INACTIVE FOR DESIGN AFTER 29 JUNE 2012. NO SUPERSEDING STANDARD. FOR DESCRIPTION OF STATUS NOTES SEE NAS380.

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.  
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REVISION DATE:

ISSUE DATE: OCTOBER 1959      REVISION DATE: JUNE 29, 2012

|            |                                          |                                                                            |                                                      |                          |
|------------|------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------|--------------------------|
| FORM 09-01 | THIRD<br>ANGLE<br>PROJECTION             |                                                                            | CUSTODIAN<br><br>ENGINEERING MANAGEMENT COMMITTEE    | REVISION<br><br><b>2</b> |
|            | PROCUREMENT<br>SPECIFICATION<br><br>NONE | TITLE<br><br><b>PRESS – HYDRAULIC<br/>DIRECT ACTING INTERNAL EXPANSION</b> | CLASSIFICATION<br>SPECIFICATION<br><br><b>NAS940</b> | SHEET 1 OF 16            |



# INACTIVE FOR DESIGN AFTER 29 JUNE 2012

## SPECIFICATION

### PRESS - HYDRAULIC

### DIRECT ACTING INTERNAL EXPANSION

#### 1.0 SCOPE

##### 1.1 Purpose

This specification provides a standard for the manufacture, performance, inspection and procurement of a Direct Acting Internal Expansion Hydraulic Press. This standard lists minimum requirements and is not to limit design advances.

##### 1.2 Classification

The machine(s) shall be of the following type(s), size(s) and class.

##### 1.2.1 Type

The customer shall specify one of the following types.

Type I - Horizontal Cylindrical

Type II - Vertical Cylindrical

##### 1.2.2 Size

The standard sizes for each type are shown in Tables I and II (3.2.1 and 3.2.2).

##### 1.2.3 Class

This equipment shall be classified as: Press - Hydraulic Direct Acting Internal Expansion.

① COMPLETELY REVISED

#### LIST OF CURRENT SHEETS

| Sheet No. | Rev. No. | Sheet No. | Rev. No. | Sheet No. | Rev. No. | Sheet No. | Rev. No. |
|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
| 1         | 1        | 5         | 1        | 9         | 1        | 13        | 1        |
| 2         | 1        | 6         | 1        | 10        | 1        | 14        | 1        |
| 3         | NEW      | 7         | 1        | 11        | 1        | 15        | NEW      |
| 4         | NEW      | 8         | 1        | 12        | 1        |           |          |

**CUSTODIAN:** AIRFRAME MANUFACTURING EQUIPMENT COMMITTEE

**PROCUREMENT SPECIFICATION**

NONE

**TITLE**

PRESS - HYDRAULIC  
DIRECT ACTING INTERNAL EXPANSION

**CLASSIFICATION SPECIFICATION**

**NAS Documents**  
SHEET 1 OF 15

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2.0 APPLICABLE SPECIFICATIONS, CODES AND STANDARDS

The latest revision of the following specifications, codes and standards are included as a portion of this specification. Detail requirements listed in this specification shall override any contradictory portions of the following specifications, codes and standards.

- 2.1 The Joint Industrial Council (JIC) Electrical Standards for General Purpose Machine Tools, EGP.1.1967.
- 2.2 The Joint Industrial Council (JIC) Hydraulic and Pneumatic Standards for Industrial Equipment.
- 2.3 The United States of America Standards Institute (USASI) Standards as follows.
  - 2.3.1 B11.1 - 1960 Power Presses, Safety Code for.
  - 2.3.2 B31.1 - 1955 Pressure piping, Code for.
  - 2.3.3 B93.3 - 1965 Cylinder Bore and Piston Rod Sizes for Fluid Power Cylinders.
  - 2.3.4 B93.5 - 1966 Use of Fire Retardant Fluids for Fluid Power Systems, Practice for the.
  - 2.3.5 B40.1 - 1939 Indicating Pressure and Vacuum Gages.
- 2.4 The American Society of Mechanical Engineers' Boiler and Pressure Vessel Code, Section VIII.
- 2.5 National Electrical Code (NEC).
- 2.6 The Electronic Industries Association (EIA) Construction Standards.
- 2.7 All Point of Delivery Electrical and Safety Codes that are more exacting shall apply.

3.0 REQUIREMENTS

The manufacturer's contractual obligations for the design and function of the machine shall be specified in this section.

3.1 Design

The manufacturer has the choice of configuration and the functional operation of the machine, except where specifically stated in this specification.

3.2 Types, Sizes, Class

- 3.2.1 Table I lists the sizes and classification of presses for Type I (see Diagram 8.1.1).
- 3.2.2 Table II lists the sizes and classification of presses for Type II (see Diagram 8.1.2).

① COMPLETELY REVISED

**Documents**  
940  
Document Sharing Hub  
SHEET 2

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APPROVAL DATE Oct. 1959 REVISION ① 15 Aug. 1970

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3.2.1

TABLE I

| SIZE OF PRESSES | WORKING AREA<br>"A" x "B" x "C" (Section 8.1.1) |                         | FORMING PRESSURE |                       | CYCLE TIME<br>50% DISPLACEMENT |
|-----------------|-------------------------------------------------|-------------------------|------------------|-----------------------|--------------------------------|
|                 | L. H. TRAY                                      | R. H. TRAY              | MAXIMUM          | ADJUSTABLE<br>DOWN TO |                                |
| 20 x 50         | 14"x42"x4"                                      | 15"x46-1/2"x3"          | 15,000 P.S.I.    | 1,500 P.S.I.          | 100 to 140 Seconds             |
| 30 x 92         | 20"x82"x5-1/2"                                  | 25"x87-3/8"x4"          | 15,000 P.S.I.    | 1,500 P.S.I.          | 100 to 140 Seconds             |
| 36 x 92         | 26"x80"x6"                                      | 30-1/4"x86-3/4"x4-1/2"  | 15,000 P.S.I.    | 1,500 P.S.I.          | 100 to 140 Seconds             |
| 36 x 116        | 26"x104"x6"                                     | 30-1/4"x110-3/4"x4-1/2" | 15,000 P.S.I.    | 1,500 P.S.I.          | 100 to 140 Seconds             |
| 36 x 140        | 26"x128"x6"                                     | 30-1/4"x134-3/4"x4-1/2" | 15,000 P.S.I.    | 1,500 P.S.I.          | 100 to 140 Seconds             |
| 50 x 116        | 37-3/4"x104"x10"                                | 46-1/4"x109"x6"         | 10,000 P.S.I.    | 1,000 P.S.I.          | 65 to 90 Seconds               |
| 50 x 140        | 37-3/4"x128"x10"                                | 42-1/2"x133-1/2"x6"     | 10,000 P.S.I.    | 1,000 P.S.I.          | 65 to 90 Seconds               |
| 50 x 164        | 37-3/4"x152"x10"                                | 42-1/2"x157"x6"         | 10,000 P.S.I.    | 1,000 P.S.I.          | 65 to 90 Seconds               |

NOTES: 1. Maximum height of table assembly "D"  
(Sec. 8.1.1) 38" for all sizes.

2. Adjustable dwell time, at set pressure,  
0 to 30 seconds. Available as an option  
for all sizes.

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NAS Documents  
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3.2.2

TABLE II

| SIZE OF PRESSES | WORKING AREA<br>"A" DIA. X "B" (SEC. 8.1.1.2) | FORMING PRESSURE |                       | CYCLE TIME<br>50% DISPLACEMENT |
|-----------------|-----------------------------------------------|------------------|-----------------------|--------------------------------|
|                 |                                               | MAXIMUM          | ADJUSTABLE<br>DOWN TO |                                |
| 24              | 24" x 4"                                      | 10,000 P.S.I.    | 1,000 P.S.I.          | 25 Seconds                     |
| 36              | 36" x 4"                                      | 7,500 P.S.I.     | 750 P.S.I.            | 35 Seconds                     |
| 48              | 48" x 4-1/2"                                  | 5,000 P.S.I.     | 500 P.S.I.            | 50 Seconds                     |

- NOTES:
1. Lower platen height "C" (Sec. 8.1.1.2)  
35" for all sizes.
  2. Adjustable dwell time, at set pressure,  
0 to 30 seconds. Available as an option  
for all sizes.

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