Beech Aircraft Corporation

SPECIFICATION

PARTS IDENTIFICATION

Beech Specification BS 382D

ISSUED March 5, 1951

REVISED March 25, 1954

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Beech Aircraft Corporation

SPECIFICATION BS 382D

PAGE 1 OF 13

TITLE PARTS IDENTIFICATION

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CONTENTS

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

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1. SCOPE

1.1 Purpose.- The purpose of this specification is to establish a system for identifying parts according to their engineering drawing numbers. This specification is also the reference source for limitations and prohibitions pertaining to steel impression stamping of parts for any purpose.

1.1.1 Application.- This specification is applicable to all products manufactured to Beech engineering drawings that do not specify parts identification per Beech Specification BS 383.

1.2 Materials:

1.2.1 Rubber Stamp Inks:

1.2.1.1 Non-Etching.-

Superior Spartan	Superior Marking Equipment Company Chicago, Illinois
Superior Trojan	Superior Marking Equipment Company Chicago, Illinois
Drimarquette Super Marking Ink	The Irwin-Hosson Company Portland, Oregon
Silver Rubber Stamping Ink	Banner Rubber Stamp and Seal Company St. Louis, Missouri
Master Marker No. 127 or No. 127-1/2	Pannier Bros. Stamp Company 207-9 Sandusky St., N.S. Pittsburgh, Pennsylvania

The color preferred is black for general use, silver for rubber products, and white or other colors as needed to provide contrast.

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

1.2.1.2 Etching.-

Master Marker AE No. 6	Pannier Bros. Stamp Company 207-9 Sandusky Street, N.S. Pittsburgh, Pennsylvania
Stampetch	Beech Aircraft Corporation
Beech No. 4001 Ink	Beech Aircraft Corporation

NOTE: Use of No. 4001 ink is restricted to aluminum materials and it must only be applied prior to chromodizing, anodizing or alodizing.

1.2.2 Tags, Attaching Wire, and Miscellaneous Materials.- Metal tags and attaching wire used to identify aluminum, magnesium, and stainless steel parts shall be of aluminum material; those used to identify ferrous (except stainless steel), brass, and bronze parts shall be of mild steel material. Tagged cloth sacks, paper sacks, cartons, labels, and placards may be used.

1.3 Definitions:

1.3.1 Assembly.- The term assembly as used herein is defined as any combination of parts separated from a major component for manufacturing or stocking purposes and identified by a Beech drawing. This does not mean Production Planning subassemblies unless included in Appendix I.

1.3.1.1 Major Component.- A major component is a major division of the end article which can be separated and stocked as an assembly or spare part. Major components shall be marked by placard, using the assembly number by which the part is ordered or as called out on the engineering drawing. See Appendix I.

1.3.1.2 Spares.- Spares are parts or combinations of parts established by agreement between Parts Sales and Service Division as being acceptable for delivery to a customer as service repair parts. Spares must be assigned engineering drawing numbers or engineering drawing subassembly dash numbers. Production Planning subassemblies do not qualify as spares unless an engineering drawing number or dash number is assigned, except as noted in Appendix I.

1.3.1.3 Military Parts, Equipment, Accessories, and Spares.- For the purposes of this specification, Military parts, equipment, accessories, and spares

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

1.3.1.3 Military Parts, Equipment, Accessories, and Spares.- (Continued) are those sold to Military customers under a contract which requires part numbering and which are included as "Items to be marked" in Paragraph 3.2.1 (a) through (h).

1.3.1.4 Commercial Parts.- For the purposes of this specification, commercial parts are the parts sold only to commercial customers; the parts sold to Military customers under a contract which does not require part numbering; and all the parts covered by Paragraph 3.2.1 (i).

1.3.2 Sufficient Surface.- Sufficient surface shall be defined as the smallest area required to encompass the part number of the part in question when the smallest numerals and type provided by Beech for part-numbering usage are used and the limitations of this specification for stamping are observed.

2. APPLICABLE SPECIFICATIONS

2.1 Specifications.-

MIL-M-7911	Marking, Identification of Aeronautical Equipment, Assemblies, and Parts
AN-M-13	Marking, Labeling, and Tagging, Aircraft Aeronautical Equipment; Accessories, Parts, Materials and Supplies
U.S. Army	
98-24105-8	Marking for Airplanes and Airplane Parts

3. REQUIREMENTS

3.1 Marking Information.- The applicable engineering production drawing number shall be applied to parts or assemblies. Marking, for other purposes than part identification as outlined in this specification, is not required or covered by this specification.

3.1.1 Production Planning Assembly Numbers.- Numbers other than those covered in Paragraph 3.1 should not be applied to the parts. Other subassembly numbers shall be attached to five percent of each order of parts and removed at

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

3.1.1 Production Planning Assembly Numbers.- (Continued)

the installation point where the assembly becomes a portion of another assembly. The tags in Paragraph 1.3.2 or other suitable nonmetallic substitutes for the purpose may be used but, in all cases, must be removed before the part is delivered to the customer.

3.1.1.1 Abbreviation of Assembly.- For part-number stamping, the abbreviation "ASSY" may be used for Assembly. "ASSEM" will be considered acceptable but is not preferred. This abbreviation may be used on all items requiring marking and satisfying the definition of assembly as outlined in Paragraph 1.3.1. Use of this abbreviation is optional.

3.2 Items to be Marked:

3.2.1 Parts, Equipment, Accessories and Spares.- All parts, equipment, accessories and spares listed below and used on Military aircraft or other Military aeronautical equipment shall be part numbered except as noted in Paragraphs 3.2.1.1, 3.2.1.2, and 3.2.1 (i). Such parts used on commercial aircraft or equipment, excepting certain propeller parts, may be numbered at the option of the manufacturing departments. Drawing callouts for the numbering of such parts for commercial usage shall be interpreted as noted in Paragraph (i), except that the propeller hub, blade, transmission and governor assemblies must be numbered and otherwise identified according to drawing callout to agree with CAA and other requirements.

(a) Detail parts identified by a Beech drawing number which assemble with screws, bolts, or other nonpermanent attachments. Pressed-in bushings and similar parts shall be considered a permanent attachment.

(b) Parts made from castings, forgings, and moldings when the drawing does not provide raised or depressed numbers. In this case, the original numbers that are not correct for the completed part shall be removed and the part shall be reidentified as required by this specification.

(c) Special bolts which are not reworked from AN standard bolts, such as bolts of special material, or extra high heat-treatment, or special dimensions, shall have the part-number stamped on the head. When the head is too small for stamping the part number, the letters "SPL" shall be stamped on the head.

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

3.2.1 Parts, Equipment, Accessories, and Spares.- (Continued)

(d) Reworked bolts made from AN standard bolts shall have a circle circumscribed about the asterisk or other standard head markings.

(e) Matched set or pairs. See also Paragraph 3.2.2.

(f) Assemblies as defined in Paragraph 1.3.1. When these are for use at the Beech plant, they must be assembled by non-permanent means. When delivered as spares, all must be identified.

(g) All spares as defined in Paragraph 1.3.1.2.

(h) All purchased parts which are altered to Beech drawing requirements, unless otherwise specified by the drawing, shall be reidentified with the Beech drawing number. The manufacturer's part numbers shall be obliterated or removed. Raised figures shall be removed by grinding or filing flush. Depressed or impression-stamped numbers shall be obliterated by stamping with "X's". The method for removing or obliterating other types of markings is optional. When rework of instruments is restricted solely to changing dial markings, the manufacturer's number need not be removed or obliterated. The structural strength, function, or quality of the part shall not be impaired by the operations necessary for re-identification.

(i) Parts not included above are not required to be marked by engineering drawings or this specification. The engineering drawing callout, if used on such parts, is an authorization for identification marking and the method, except as noted in Paragraph 3.5, the location, and the limitations are mandatory only if the manufacturing departments require marking for their facility. The policy regarding parts marking for service, stocking, and handling facility of parts other than those parts in Paragraph 3.2.1 required by engineering to be marked, shall be established by the manufacturing departments.

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

3.2.1.1 Parts Which Do Not Have Suitable or Sufficient Surface for a Part Number.- Such items shall be marked by tagging approximately five percent of them individually or labeling the unit package.

3.2.1.2 Components of Assemblies Which are Permanently Assembled by Welding, Brazing, Soldering, Gluing, Cementing, Press Fit, or Riveting.- The assembly shall be marked. All parts which cannot be permanently identified because of heat-treatment or protective finish requirements, or parts that lose their detail identity by becoming a permanently joined component of an assembly may be numbered or identified by having at least five parts in each lot tagged with stamped part-number tags before leaving fabrication. Such tags are to be removed when the part becomes a portion of an assembly or when subsequent permanent identification is accomplished.

3.2.2 Matched Sets or Pairs.- In addition to part numbers, matched sets or matched pairs shall be marked with "Matched Pair (or Set). Do Not Issue Separately".

3.3 Location of Marking.- The location is dependent upon the following:

1. Visible after assembly, when practicable, except placards and name plates which shall be marked on the side invisible after assembly.
2. Must not show up conspicuously in cockpit or cabin.
3. Must not appear on the exterior of skin parts.
4. Must not interfere with the function of the part.
5. The location of the part number, on all parts except purchased parts, shall be at the discretion of Tool Planning. The location of the part number on purchased parts made to Beech drawings shall be at the discretion of the Procurement Department. In either case, the location shall be within the limits of this specification.

3.4 Legibility.- The marking shall be applied in such a way as to insure its legibility on the completed parts or assemblies. In general, when using rubber stamps, use as large type and numerals as the stamping area on the part will permit.

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

3.5 Methods of Application of Marking.- Use steel stamping whenever possible. Rubber stamping, or tagging if rubber stamping is not feasible, may be used in lieu of steel stamping. The method of applying the part number, on all parts except purchased parts, shall be at the discretion of Tool Planning. The method of applying the part number to purchased parts made to Beech drawings shall be at the discretion of the Procurement Department. In either case, the method of application shall be within the limits of this specification.

3.5.1 Steel Stamping.- Steel stamping authorization for part numbering purposes must be on Tool Planning sheets or engineering drawings except for purchased parts. Steel stamping authorization for purchased parts made to Beech drawings must be on the drawing. When steel stamping equipment, Paragraph 3.5.1.1, is not available for use, rubber stamping and/or other means of identification provided in this specification may be used in place of the steel stamping requirement. This does not authorize tagging in place of marking as specified in Paragraph 3.2.

3.5.1.1 Equipment.- Steel stamps shall consist of numerals 1/16-inch to 3/16-inch high and shall have all sharp corners rounded to a radius of .005 $^{+.005}_{-.000}$-inch on 1/16-inch to 3/32-inch size markings; and a radius of 0.010 $^{+.005}_{-.000}$-inch on 1/8-inch to 3/16-inch markings. Equipment for steel stamping shall have adjustments or suitable provisions for controlling the impression depth.

A callout for "Steel Stamp" or "Method Optional" shall authorize steel impression stamping; the maximum depth of such stamping shall not exceed .020 inch, and is controlled by regulation of the application pressure.

A callout of "Controlled Depth Steel Stamp" shall authorize steel impression stamping; the maximum depth of such stamping shall not exceed .007 inch. The characters used in this case are specially engraved so that they bottom out at .007 inch depth as an additional control to pressure regulation. Impressions made with standard characters exceeding .007 inch depth are not acceptable if "Controlled Depth" is specified. Use of the special controlled depth characters should be limited to cases of necessity due to structural or functional considerations, since they are more expensive than the standard characters.

3.5.1.2 Sequence.- Steel stamping shall be applied prior to anodizing, plating, phosphatizing, or painting.

3.5.1.3 Limitation:

3.5.1.3.1 Steel Stamping is Prohibited At All Times on the Following Parts.-

(a) Tubing used for plumbing.

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

3.5.1.3.1 (Continued) **Steel Stamping is Prohibited At All Times on the Following Parts.-**

(b) Swaged areas of cable fitting.

(c) Bearing surfaces.

(1) Bearing shall be defined as friction bearing surfaces (not static bearing).

3.5.1.3.2 **Steel Stamping is Prohibited on All of the Following Parts (Unless Otherwise Noted on the Engineering Drawings).-**

(a) Parts made of 75S

(b) Parts made of 14S and age-hardened 24S

(c) Parts made of bar or billet stock to replace a casting or forging (commonly termed "Hog-out").

(d) Parts, the serviceability of which may be impaired by indentation of steel stamps, such as the following metal parts:

(1) Tank straps

(2) Springs

(3) Hose clamps

(4) Parts subject to repeated flexure.

(e) Parts made of steel which is or will be heat-treated to 180,000 psi and over or surface hardened, except (1) when stamping is restricted to the heads or ends of bolts or pins; (2) when a welder's marking is made per Beech Specification GS 367.

(f) Parts made of steel tube welded into a welded tubular structural item, except when a welder's marking is made per Beech Specification GS 367.

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

3.5.1.3.2 Steel Stamping is Prohibited on All of the Following Parts (Unless Otherwise Noted on the Engineering Drawings).- (Continued)

(g) Parts made of castings except as provided by Beech Standard 112475 or by engineering drawing of the part.

(h) Parts made of magnesium alloy in wrought form (sheet, tubing, extrusions).

(i) Parts made of stainless steel.

(j) Material .025 inch thick and under (placards, name plates, shims, nonstructural filler strips, upholstery panels, and trim strips excepted).

(k) Precision machined surfaces. Such surfaces are those finished to 60 microinches or less.

3.5.1.3.3 Steel stamping shall avoid proximity to edges, holes, corner fillets, weld beads, and spot weld areas, and must be preferably in the thickest section, but not in an area where the section changes abruptly.

3.5.1.3.4 The penetration of the steel stamps shall be kept to a minimum. There shall be no distortion of the material or disfiguration of the opposite surface.

3.5.1.3.5 Control cable fittings (turnbuckle forks, eyes, and similar parts) having space limitations so the part number can only be impression stamped around the shank shall be "Controlled Depth Steel Stamps" to a depth not exceeding .007 inch.

3.5.2 Rubber Stamping:

3.5.2.1 Equipment.- Use commercially available rubber stamps (Sizes 00, 0, 1, 2, 2-1/2, 3 and 4) and stamp pads with any of the inks listed in Paragraph 1.2.

3.5.3 Electric Etch:

3.5.3.1 Equipment.- Employ the special equipment of the Electro-Etch Company of Cleveland, Ohio, or equivalent.

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

APPENDIX I

AUTHORIZED SPARES AND PRODUCTION ASSEMBLY PART NUMBERS

The purpose of this appendix to BS 382 is to list those production assembly numbers that have been made acceptable for parts identification purposes by the issuing of special drawings.

The special drawing list of this appendix includes all of the Production Planning SA (subassembly) parts numbers that may be put on or affixed to parts to be delivered to the customer. As these numbers are incorporated into the regular engineering drawing system, they shall be deleted from the list of this appendix.

NOTE: Copies of these special assembly drawings may be obtained from the Production Planning blue print files.

Special Subassembly Drawing List

1180042	SA 1	814-180555	SA 3	B18120	SA 44		
804-180550	SA 35	814-180555	SA 4	B18120	SA 45		
804-180550	SA 36	814-180555	SA 7	B18120	SA 94		
804-180550	SA 37	814-180555	SA 8	B18120	SA 95		
804-180550	SA 38	814-180555	SA 60	181313	SA 1		
804-180550	SA 41	814-180555	SA 61	181350	SA 12		
804-180550	SA 42	804-180573	SA 4	181350-1	SA 11		
804-180550	SA 45	804-180574	SA 3	18150	SA 1		
804-180550	SA 46	84-180650	SA 1	18150	SA 2		
804-180550	SA 53	84-180658	SA 1	181501-601			
804-180550	SA 54	84-180784	SA 2	181501-602			
804-180550	SA 60	180905-6	SA 2	18162-1	SA 1		
804-180550	SA 61	180905-8	SA 2	18162-1	SA 2		
814-180555	SA 1	B18120	SA 34	18162-2	SA 1		
814-180555	SA 2	B18120	SA 35	18162-2	SA 2		
18162-3	SA 1	185270	SA 1	18800A	SA 2		
18162-3	SA 2	404-185270-602		18810A	SA 1		

TITLE PARTS IDENTIFICATION

ISSUED March 5, 1951

WRITTEN BY R. D. Cook Revised by: M. C. Kitchen REVISED March 25, 1954

Special Subassembly Drawing List (Continued)

181650	SA	1
181650	SA	2
18185	SA	2
18185	SA	3
84-183152	SA	1
824-183270	SA	2
84-183275	SA	1
824-183280	SA	2
824-183290	SA	2
804-183297	SA	1
804-183297	SA	2
814-183297	SA	1
814-183297-1	SA	2
804-183391-601		
814-183601	SA	1
804-183850	SA	1
183852	SA	1
804-183960-601		
183967	SA	2
183979	SA	1
824-184000	SA	54
84-184030-601		
184096P-601		
43-184130	SA	1
18440	SA	1
18440	SA	5
18441	SA	1
18441	SA	2
18441-606		
18471	SA	1
814-184735	SA	2
814-184735	SA	3
184820	SA	2
18526	SA	1
404-185260-601		
189175	SA	2
189175	SA	3
189186	SA	3
189186	SA	5
1889213	SA	1
189250	SA	1
189260-6	SA	1
84-185600	SA	6
804-185600	SA	3
18563	SA	1
814-185642	SA	1
185650	SA	1
1885850P-16	SA	2
1885850P-17	SA	1
1885850P-18	SA	2
1885850P-19	SA	1
185901	SA	1
185901	SA	2
185901-500	SA	1
84-185910-1	SA	1
84-185910-2	SA	1
84-185910-2	SA	2
185951	SA	1
185951	SA	2
185951	SA	4
804-185951	SA	1
804-185951	SA	2
804-185951	SA	4
186050A	SA	10
186050A	SA	15
186110	SA	1
84-186175	SA	2
186200	SA	1
186200	SA	4
186350	SA	2
186350-1	SA	1
187090	SA	10
84-187236	SA	1
187753	SA	1
187761L	SA	12
187761R	SA	11
187830	SA	1
189526A	SA	1
189526A	SA	2
189526A	SA	5
189526A	SA	6
189600U	SA	1
189600U	SA	2
189604	SA	4
404-188401-602		
404-188401-603		
804-188418	SA	3
804-188418	SA	4
804-188418-601		
804-188418-1-602		
804-188420-601		
804-188500	SA	5
804-188500	SA	6
804-188500	SA	7
804-188500-601		
188503-601		
804-188660	SA	3
804-188660	SA	13
18870	SA	1
84-188900	SA	2
84-188900	SA	4
814-189000	SA	21
814-189000	SA	22
814-189000	SA	23
74-189020	SA	2
189123	SA	1
189124	SA	1
804-189125	SA	2
804-189125-1	SA	1
189135	SA	1
189140	SA	1
1889150	SA	1
189160	SA	4
189171	SA	2
189171	SA	4
189174	SA	1
189174	SA	2
189174	SA	4
189175	SA	1
189604	SA	5
189605	SA	4
189605	SA	5
189686	SA	1
1897211	SA	1
189805	SA	2