

VII.2
The reason I am sending the XI.9
older history is because it has
material of an earlier period

Also the newer copy has reference
to our latest material

From time to time I will send what
may be of value to you —

B.V.
(Bill Vardaman)

X1.9.
VII.2.

SATURN HISTORY DOCUMENT
University of Alabama Research Institute
History of Science & Technology Group

TOOL NUMBER	TITLE	Date -----	Doc. No. -----	ROUGH	DRAFT	FINAL	REVISION	
AAP								
MiT-375-14529	Action-Reaction Free-Fall Simulator (December 1967)						X	
MiT-395-14811	Surface-Zero Gravity Simulation Calibrated Measuring Force Receiver (December 1967)					X		
Manufacturing Plan	Proposal for Attitude Control Modules (December 1967)			X				
Manufacturing Plan	Spent Stage Exp. Support Module (June 1966)					X		
Manufacturing Plan	Proposal for Electromagnetic Radiation Astronomy Package (October 1966)					X		
Manufacturing Plan	Apollo Telescope Mount (February 1968)			X				
Manufacturing Plan	Assembly and Re-Assembly Procedure on LEM Mockup (January 1967)					X		
Manufacturing Plan	Payload Module (PM) - "Structure Assy." 30M14650 (September 1967)			X				
Manufacturing Plan	Multiple Docking Adapter (December 1967)			X				
Manufacturing Plan	Nuclear Ground Test (May 1966)					X		
				O-NONE ISSUED	S-SUPPLEMENT			
				X-RECEIVED	C-CANCELLED			
				* NOT FOR REGULAR DISTRIBUTION				
ISSUE April 1968	PREPARED	APPROVED	OFFICE R-ME-TDP	DISTRIBUTION				
TITLF PUBLICATION LISTING			MANUFACTURING ENGINEERING LABORATORY MSFC NASA					
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
Manufacturing Plan	Nuclear Ground Test - Abridged Version (March 1967)		X	
Manufacturing Plan	Orbital Workshop Solar Array (January 1968)	X		
Manufacturing Plan	Orbital Workshop Attitude Control Module (November 1967)	X		
SPECIAL PROJECTS				
Instructions	Std. Instructions for Procuring, Receiving, Handling, and Storing Expanded and Unexpanded Honeycomb Cores and Face Sheet Materials (Jan '68)	X		
AF-470-14533	17-Inch Valve Shaft and Bellows Assembly Preassembly and Test Fixture (October 1966)	X		
MIT-954-14546	Tube Chamfering and Facing Tool (15 March 1966)	X		
PTE-954-14561	Pressure Testing Equipment (15 July 1966)	X		
HT-496-14609	S-II Adapter Ring Hoisting Sling (22 June 1966)	X		
	Tool Design Manual, Mechanical Drawings (6 April 1962) (17 August 1962) (1 October 1962) (8 March 1963) (23 August 1963)	X	X	X
	Preparation of Tool Instruction Manuals (15 August 1961) (20 December 1961) (23 August 1962)	X	X	X
HT-395-14676	S-V Damper System Components Hoisting Tool (January 1967)		X	
SPECIAL PROJECTS				
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TOOL NUMBER	TITLE	REVISION	
		ROUGH DRAFT	FINAL
PTE-934-14561	Pressure Test Equipment (July 1966)	X	
	Precision Positioning Control for Welding of Saturn Space Vehicles		X
	Arc Variation Study, Internal Note (13 April 1962)		X
	Dynamic Braking Motor Governor, Invention Disclosure (20 February 1962)		X
	Research Effort Pertaining to Aluminum Rib Detection, Internal Note (15 January 1962)	X	
	Metal-Inert-Gas (MIG) Spot Welder (January 1962)	X	
	Alignment Position Indicator for AF-1-302-02000 (16 March 1962)		X
	Governor Servo Control Unit (21 February 1962)		X
	Controlled Arc Power Supply (24 July 1962)		X
DFMT-IN-19-60	Manual Heliarc Spot Welding Equipment Development (6 June 1962)		X
4-GM451230	Timer Programmed Consumable Electrode Fusion Spotwelding Process (Variac) (January 1961) (15 November 1961)	X	X
	Specification, Bridge Type Cranes for use on North Gantry, Saturn Assembly Station No. 3 (30 August 1961) (18 September 1961)	X	X
HT-395-14645	Damper System Assembly Hoisting Tool (December 1966)		X
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
HONEYCOMB PROJECTS				
BF-395-5138	Honeycomb Panel Assembly Bond Form Fixture (27 July 1965) (1 June 1966)	X		X
TmF-395-5139	120-Inch Diameter Honeycomb Panel Trim Fixture (22 June 1965)	X		
ADJ-395-5140	Honeycomb Cylindrical Assembly 30-Inch, 60-Inch, and 120-Inch High 90-Degree Panels Assembly Drill Jig (15 April 1966)	X		
BF-395-5149	120-Inch Diameter Honeycomb Panel Assembly Bond Form Fixture (30 July 1965) (15 June 1966)	X		X
BF-318-6400	Cylindrical Shroud Panels Bond Form Fixture (15 August 1966)		X	
MiT-318-6404	Bond Form Fixture Base Plate Mill Fixture (15 October 1965)	X		
MiT-318-6411	HOBE Expander Table (15 October 1965)	X		
MiT-318-6412	Honeycomb Before Expanding (HOBE) Saw Table (30 June 1966)	X		
MiT-318-6434	Honeycomb Panel Cleanup and Ultrasonic Test Miscellaneous Tool (31 August 1966)		X	
HT-318-6437	Honeycomb Panel Hoisting Tool (26 May 1966)	X		
HT-318-6753	60-Degree Cylindrical Shroud Panels Handling Tool (15 July 1966)		X	
HT-372-6759	Honeycomb Shroud Bond Form Fixture Handling Sling (3 January 1966)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
HT-318-6760	Honeycomb Shroud Storage Rack (StR-318-6407) Handling Sling (28 February 1966)	X		
PrD-318-6762	Flat Honeycomb Sheet Production Dolly (15 December 1965)	X		
PrD-318-6763	Honeycomb Shroud Curved Honeycomb Sheet Production Dolly (28 February 1966)	X		
HT-318-6764	HOBE Handling Tool (1 November 1965)	X		
PrD-318-6765	HOBE Production Dolly (15 December 1965)	X		
PrD-318-6768	Honeycomb Shroud Face Sheet Holding Fixture Production Dolly (20 January 1966)	X		
DJ-318-6769	Honeycomb Shroud 60-Degree Shroud Panel Segment Forward Edge Drill Jig (28 February 1966)	X		
LH ₂ EXPERIMENT				
Manufacturing Plan	LH ₂ Forward Nose Cone Assembly		X	
AF-132-6300	LH ₂ Experiment Lower Cone Assembly Fixture (1 August 1965)	X		
AF-132-6301	Saturn 1B LH ₂ Experiment Upper Nose Cone Assembly Fixture (Change, September 30, 1966)	X		X
HT-132-6308	LH ₂ Experiment Nose Cone and Lower Frustum Assembly Hoisting Tool (1 July 1965)	X		
HT-132-6314	LH ₂ Experiment Lower Frustum Hoisting Tool (10 August 1965)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
TORUS				
AF-953-6100 and AFA-953-6101	Torus Test Tank Assembly Fixture and Torus Test Tank Assembly Fixture Accessory (20 May 1964)	X		
CRYOGENIC TEST TANK				
AF-13559	105-Inch Cryogenic Test Tank Insulation Assembly Fixture (27 April 1964)			X
SK30-1834	Handling Procedure for 105-Inch Cryogenic Tank Assembly for Rocket Sled Test (August 1967)		X	
Manufacturing Plan 16-A-Y-250	Insulation of 20-Inch Diameter Bi-Metal Joint Cryogenic Test Tank for Purged S1-62 Insulation Test (October 1967)		X	
SATURN V				
	Center Engine Support Assembly Drill Jigs (1 October 1963)		X	
	Forward Skirt Assembly-to-Oxidizer Tank Assembly Vertical Mating Operation-Hydrostatic Test Tower (5 June 1964)	X		
	Fuel Assembly Laydown and Transporting Procedure (30 October 1964) (20 January 1965) (1 May 1965)	X		X
	Fuel Tank Assembly-to-Thrust Structure Assembly Vertical Mating Operations - Structural Assembly Tower (10 July 1964)	X		
	Head Assembly Fabrication Station (15 May 1963)		X	
	Horizontal Installation and Removal of Fuel and LOX Delivery Systems Components (30 April 1965)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
	Operation and Maintenance Instruction Manual- Sequencer (30 September 1963)		X	
	Oxidizer Assembly Laydown and Transporting Procedure (30 October 1964)	X		
	Oxidizer Tank Assembly-to-Intertank Structure Assembly Vertical Mating Operation-Structural Assembly Tower (10 July 1964)	X		
	Saturn V Booster Stage S-IC Handling Equipment (1 Aug 1963) (15 Oct 1963) (22 Nov 1963) (15 Apr 1964) (15 Aug 1964) (15 Dec 1964) (15 Mar 1965) (1 Jun 1965) (1 Jul 1965)		X	X
	Saturn V Booster Stage S-IC Horizontal Assembly Station (2 November 1964)	X		
	S-IC Bulkhead Test Vertical Handling and Assembly Procedure (24 July 1963) (16 September 1963)		X	X
	S-IC Transporter Instructions and Maintenance Manual		X	
	Static Firing Stage S-IC-T, Structural Test Components S-IC-S, Dynamic Test Stage S-IC-D, and Flight Vehicle S-IC-I Tower Vertical Handling Sequence (15 May 1964)		X	
	Structural Assembly Tower Tank Close-Out Weld and Skin-to-Skin Weld (4 November 1963)	X		
	Thrust Structure Assembly Drill Jigs (15 November 1963) (Rev 15 January 1964) (Rev 20 April 1964)	X		X
	Vertical Installation and Removal of Fuel and LOX Delivery Systems Components (1 April 1965)	X		
PB-4MP-4063	Maintenance and Trouble Shooting Manual for "LYP-TRAK" Welder (6 April 1964)		X	
EFW-13376	Manufacturer's Check-Out Procedure EFW-13376-20 for Out-of-Position Spot Welding (MIG) (11 January 1963)		X	
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
EWf-13376	Operation and Maintenance Instruction Manual Out-of-Position Spot Welder (22 March 1963)		X	
RF-J02-7000	Bulkhead Gores Right-Hand Carriage Router (14 September 1962)		X	
RF-J02-7001	Bulkhead Gores Left-Hand Carriage Router (8 September 1962)		X	
WF-J02-7002	Bulkhead Welding Carriage (1 October 1962)		X	
T&WF-J02-7003	Bulkhead Gore Trim and Weld Fixture Welder Subbase (8 September 1962)		X	
WF-J02-7004	Apex Backup Bar (1 October 1962)		X	
TmF-J02-7006	Bulkhead Gore Trim Fixture (19 November 1962)		X	
ETmF-J02-7006 ETmF-J02-7023	Trim Fixture Control System (8 February 1963)		X	
WF-J02-7010	Bulkhead Gore Section Weld Fixture (7 November 1962)		X	
EWf-J02-7010	Weld Head Manipulator Control System (9 November 1962)		X	
EWf-J02-7010-1-5-2-30	Manufacturer's Check-Out Procedure Seam Tracking Control (31 Aug 1962) (9 Oct 1962) (2nd Rev 9 Nov 1962) (3rd Rev 28 Nov 1962)		X	X
EWf-J02-7010-1-5-4-46	Manufacturer's Check-Out Procedure Programming Control (31 August 1962) (30 November 1962)		X	X
EWf-J02-7010-1-5-16	Manufacturer's Check-Out Procedure Programming Control (31 August 1962)		X	
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TOOL NUMBER	TITLE	REVISION	
		ROUGH DRAFT	FINAL
AF-J02-7011	Bulkhead Fabrication Turntable		X
AF-302-7011	Procedure for Re-Establishing Targets on Bulkhead Fabrication Turntable (AF-302-7011)		X
WF-J02-7012	Bulkhead Fabrication Welding Station (28 September 1962)		X
EFW-302-7012	Programmer Control Drawer (29 April 1963)		X
RF-J02-7013	Bulkhead Skirt Trim Station (28 September 1962)		X
T&WF-J02-7014	Centerpiece to Bulkhead Trim and Weld Fixture (16 November 1962)		X
EW&TF-J02-7014	Bulkhead Closure Weld and Trim Fixture Control System (31 May 1963)		X
EW&TF-J02-7014-10	Manufacturer's Check-Out Procedure Bulkhead Closure Weld And Trim Fixture Control System (19 October 1962)		X
AF-300-7016	Assembly Tower Main Weld Station Turntable (22 April 1963)	X	
HF-J02-7017	Bulkhead Gore Holding Fixture (9 November 1962)		X
TWF-302-7019	Gore Test Weld Fixture (26 April 1963)		X
EWFA-J02-7020	Manufacturer's Check-Out Procedure Seam Tracking Control (14 August 1962)		X
EWFA-J02-7020	Weld Head Manipulator Control System (28 September 1962)		X
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EWf-J02-7020-10	Weld Head Manipulator Control System (15 September 1962)		X	
WFA-J02-7020	Weld Head Manipulator (31 August 1962)		X	
ETmF-J02-7021-14	Manufacturer's Check-Out Procedure Trim Fixture Control System (14 August 1962) (26 October 1962)		X	X
ETmF-J02-7023	Trim Fixture Control System (15 September 1962) (5 October 1962)		X	X
TmF-J02-7023	Apex and Base Gore Trim Fixture (14 September 1962) (15 March 1963)		X	X
AF-335-7027	Thrust Structure Assembly Fixture (15 August 1963) (15 November 1963)	X		X
PP-J02-7043	Gore Trim Fixture Personnel Platform (2 October 1962)		X	
WF-302-7044	Inside Y-Ring-to-Cylindrical Skin Weld Fixture (26 April 1963)		X	
SA-J02-7048	Bulkhead Fabrication Welding Station Shop Accessory (27 August 1962)		X	
WFA-J02-7057	Weld Fixture, Gantry, and Dolly Accessories (15 January 1963)		X	
TA-J02-7062	Bulkhead Trim Clamp (5 October 1962)		X	
WF-306-7067	Tank Section Weld Fixture (4 March 1963)		X	
EWf-306-7067	Tank Section Weld Fixture Control System (31 July 1963) (10 October 1963)	X	X	
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
AF-335-7070	Center Engine Support Structure Assembly Fixture (14 June 1963)	X		
AF-300-7076	Ring Baffles in Tank Section Assembly Fixture (15 June 1963)	X		
PP-370-7086	Vertical Position LOX and Fuel Tanks Interior Personnel Platform (25 October 1963)		X	
SA-370-7098	50-Ton Travelift C-Frame Shop Accessory (20 December 1963)		X	
MrG-345-7109	Thrust Structure Fairing Attach Points Master Gage (4 October 1963) (27 November 1963)		X	
DJ-335-7119, -7120, -7912, and -7913	Outboard Engine Adapter Fitting Drill Jigs (15 November 1963)	X		
DJ-335-7123, -7927, and -7928	Thrust Structure Assembly Thrust Post, Upper Ring Assembly, and Attach Angles Drill Jigs (15 December 1963)	X		
DJ-335-7125, -7265 thru -7268, -7271 thru -7282, -7285 thru -7289, -7890 thru -7892, and -7894 thru 7905	Thrust Structure Assembly Intermediate Rings Drill Jigs (3 February 1964)	X		
DJ-335-7128 through DJ-335-7131	Center Engine Support Assembly Web Assembly-to-Center Post Splice Drill Jigs (1 November 1963)	X		
DJ-335-7137 and DJ-335-7142	Skin Panel Splice Plates Above Thrust and Hold-down Posts Drill Jig and Skin Panel Splice Plates between Thrust and Holddown Post Drill Jig (25 February 1964)	X		
DJ-335-7138, DJ-335-7145, and DJ-335-7926	Thrust Structure Assembly Skin Splice Stringers Drill Jigs (10 March 1964)	X		
DJ-335-7141, -7922 thru -7925, and -9191 and -9192	Thrust Structure Assembly Holddown Posts and Skin Panels Drill Jigs (1 April 1964)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
DJ-335-7146, -7917 -7918 and -7919	Actuator Support Mounting and Lower Thrust Ring Drill Jigs and Actuator Support and Retro Rocket Adapter Fitting Drill Jig (8 April 1964)	X		
DJ-335-7147 and DJ-335-7932	Actuator Backup Fittings Drill Jigs (25 March 1964)	X		
SF-335-7180	Thrust Structure Assembly Skin Panel Assembly Support Fixture (15 December 1963)	X		
AF-342-7181	Base Heatshield Support Structure to Lower Thrust Ring Reassembly Fixture (10 April 1964)	X	X	
DJ-335-7183, DJ-335-7184, and DJ-335-7185	Center Engine Support Assembly Angle Fittings Drill Jigs (1 November 1963)		X	
DJ-335-7187, -7188, -7197, and -7199	Center Engine Support Structure Assembly Drill Jigs (15 November 1963)	X		
DJ-335-7191 and DJ-335-7192	Center Engine Support Assembly Holddown Post Drill Jigs (1 November 1963)	X		
DJ-335-7195 and DJ-335-7196	Position I, II, III, and IV Center Engine Support Assembly Auxiliary Web Cap Drill Jigs (1 October 1963)		X	
DJ-335-7200	Center Engine Support Structure Assembly Holddown Post and Auxiliary Web Drill Jig (1 December 1963)	X		
DJ-335-7201 and DJ-335-7202	Center Engine Support and Lower Thrust Ring Drill Jigs (1 December 1963)	X		
DJ-334-7203	Center Engine Support Web Support and Lower Caps Drill Jigs (15 December 1963)	X		
DJ-335-7205, -7206, -7257, and -7258	Center Engine Support Outboard and Inboard Fittings Drill Jigs (15 December 1963)	X		
DJ-335-7207 and DJ-335-7255	Inboard Upper Chord Fitting and Center Engine Support Drill Jigs (1 December 1963)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
DJ-335-7208 thru DJ-335-7211	Thrust Structure Auxiliary Web Cap and Auxiliary Web Clip Drill Jigs (1 December 1963)	X		
DJ-335-7214 thru DJ-335-7221	Center Engine Support Assembly Splice Doublers Drill Jigs (1 November 1963)	X		
DJ-335-7223 thru -7228, -7239, -7240 -7907, and -7908	Thrust Structure Assembly Intercostal Drill Jigs (21 January 1964)	X		
DJ-335-7248	Thrust Structure Assembly Strap to Framing Member Drill Jig (24 April 1964)	X		
DJ-335-7261 and DJ-335-7262	Thrust Post Outboard Channel and Skin Panel Drill Jigs (1 December 1963)	X		
DJ-335-7263 and DJ-335-7264	Thrust Structure Shear Tie And Skin Panel Drill Jigs (6 November 1963)	X		
AF-320-7290	Intertank Reassembly Assembly Fixture (25 September 1963)		X	
DJ-325-7291 and DJ-325-7293	Intertank-to-Tank Drill Jigs (27 November 1963) (1 April 1964)	X	X	X
HT-370-7292	Proof-Load Procedure for Tool Handling (Inter- Tank Assembly) Ring No. 1 (16 November 1963)		X	
P&HF-358-7400 thru P&HF-358-7408	Electrical and Pressurization Tunnels Center Support Brackets Positioning and Holding Fixture (15 August 1964)	X		
DJ-358-7409 thru DJ-358-7413	Electrical and Pressurization Tunnels to Thrust Structure Drill Jigs (3 August 1964)	X		
ADT-358-7414 and ADT-358-7417	Electrical and Pressurization Tunnels Platform Assemblies to Cover Assemblies Apply Drill Templates (31 October 1964)	X		
MiT-370-7415 and MiT-370-7421	Electrical and Pressurization Tunnels Router Drill Fixtures (1 June 1965)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
DJ-358-7418	Intertank Assembly and Platform Assembly at Station 808.04 Drill Jig (31 October 1964)	X		
SA-370-7420	50-Ton Travelift A-Frame Shop Accessory (27 January 1964)		X	
DJ-330-7443	Fuel Tank Lower Y-Ring Drill Jig (3 February 1964)	X		
SA-370-7459	Operation and Maintenance Manual Flat-Bed Dolly (15 May 1964)		X	
MiT-370-7471	Proof-Load Procedure for (MiT-370-7471) (Support Fixture - Accessory to A-Frame) (8 January 1964)		X	
HF-370-7508	Tank Segment Handling Ring Rotating Mechanism (9 August 1963)		X	
PP-370-7510	Interior Tank Personnel Platform (20 November 1963)	X		
EWf-300-7521	Hydrostatic Test Facility Welding Fixture Control System (21 June 1963) (15 October 1963)	X	X	
HF-304-7540	Exclusion Riser and LOX Tunnel Extension Holding Fixture (7 October 1963)	X		
TWF-302-7541	Head-to-Y-Ring Test Weld Fixture (29 April 1963)		X	
HTF-302-7569	Apex Gore Heat-Treat Fixture for S-IC-T Fuel Tank Assembly Upper Head Assembly (60B24150) (25 October 1963)	X		
HTF-302-7569	Apex Gore Heat-Treat Fixture for S-IC-T Fuel Tank Assembly Lower Fuel Head Assembly (60B24250) (8 October 1963)	X		
HTF-302-7569	Apex Gore Heat-Treat Fixture for S-IC-T Oxidizer Tank Assembly Upper Head Assembly (60B13100) and Lower Head Assembly (60B13200) (1 November 1963)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
MiT-370-7612	LOX Tunnel Fitting Protective Sleeve Miscellaneous Tool (30 September 1963)		X	
HTF-302-7620	Base Gore Heat-Treat Fixture (1 November 1963)	X		
TmF-302-7643	LOX and Fuel Tanks Head Assembly 54-Inch Diameter Centerpiece Trim Fixture (10 September 1963)		X	
DJ-302-7677	LOX and Fuel Tanks Upper and Lower Head Assembly Drill Fixture (5 February 1964)	X		
MiT-304-7692	Fitting-to-Gore Welds Planishing Machine (20 January 1964) (1 April 1965)	X		X
RF-300-7794	High Tower Fuel and LOX Tank Assembly Circumferential Edges of the Skin Router Fixture (10 January 1965)	X		
MiT-300-7851	Inside Oxidizer and Fuel Tank Close-Out Weld Horizontal Microshaver (16 November 1964)	X		
DJ-335-7915	Center Engine Tubing Support Bracket-to-Web Drill Jig (1 November 1963)	X		
DJ-335-7920, -7921 -7940, and -7941	Lower Ring Strut Fitting Drill Jigs (1 April 1964)	X		
DJ-335-7935 and DJ-335-7936	Shear Ties and Lower Thrust Ring Inner Cap Drill Jig and Actuator Backup Fittings, Base of Shear Tie, and Lower Thrust Ring Drill Jig (20 Apr 1964)	X		
DJ-335-7938 and DJ-335-7939	Thrust Post Left-Hand and Right-Hand Outboard Channels, and Intermediate Ring Attach Points Cap Joints Drill Jigs (28 April 1964)	X		
DJ-335-7944, -9016 and -9020	Stiffener and Cover Plate Drill Jig and Stiffener, Cover Plate, Skin Panel, and Shear Tie Drill Jigs (24 April 1964)	X		
PP-470-8006	Horizontal Stage Intertank Personnel Platform (30 April 1965)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
PP-470-8008	Horizontal Forward Skirt Internal Work Platform (10 July 1964)	X		
PP-470-8009	Operational and Maintenance Manual for LOX and Fuel Tank Personnel Platform (July 1964)		X	
AT-408-8029	LOX Suction Duct Support Roller Compressor Assembly Tool (4 December 1964) (25 May 1965)	X		X
AT-435-8034	Clean Room LOX and Fuel Prevalves Handling Cart Assembly Tool (15 February 1965)	X		
AT-408-8051	LOX Suction Duct Sliding Joint Compress or Expand Assembly Tool (1 October 1964)	X		
AT-435-8056	Thrust Structure Assembly Vertical Position Support Assembly Tool (25 May 1964)	X		
MiT-460-8098	Fuel Tank Internal Electrical Components Personnel Support Fixture (23 November 1964)	X		
MiT-460-8099	LOX Tank Internal Electrical Components Personnel Support Fixture (16 November 1964)	X		
HF-450-8104	Servoactuator and Engine Strut Holding Fixture (15 April 1965)	X		
AT-435-8501	LOX Outboard PVC Sliding Joint Compression Tool Assembly Tool (24 August 1964)	X		
AT-435-8502	Fuel Outboard PVC Sliding Joint Compression Tool Assembly Tool (24 August 1964)	X		
TA-435-8503	LOX PVC Duct Installation Adapter Tool Accessory (25 August 1964)	X		
TA-435-8504	Fuel PVC Duct Installation Adapter Tool Accessory (25 August 1964)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
HF-435-8505	Outboard LOX and Fuel PVC Holding Fixture (15 October 1964)	X		
TA-435-8506	Horizontal Installation and Removal of Fuel Prevalves Assembly Tool (28 July 1964)	X		
TA-435-8507	Installation and Removal of Inboard and Outboard LOX Adapter Spool Adapter (30 July 1964)	X		
TA-435-8508	Horizontal Installation and Removal of LOX Prevalves Assembly Tool (24 December 1964)	X		
P&HF-435-8509	Inboard and Outboard Fuel Prevalves Positioning and Holding Fixture (17 June 1964) (20 May 1965)	X		X
P&HF-435-8510	Thrust Structure Assembly Fuel Emergency Drain Duct and Valve Positioning and Holding Fixture (27 August 1964) (15 March 1965)	X		X
PP-435-8512	Thrust Structure Assembly Installation of Assembly Components Personnel Platform (22 June 1964)	X		
AT-435-8513	LOX Inboard PVC Sliding Joint Compression Tool Assembly Tool (27 August 1964)	X		
AT-435-8514	Fuel Inboard PVC Sliding Joint Compression Tool Assembly Tool (28 August 1964)	X		
HF-470-8515	LOX Tank to Fuel Tank Holding Fixture (10 August 1964)	X		
HF-435-8516	Inboard LOX and Fuel PVC Holding Fixture (28 August 1964)	X		
ALF-435-8517	Outboard Propellant Duct Supports Alinement Fixture (1 July 1964)	X		
PP-435-8520	Horizontal Thrust Structure Internal Work Platform (10 July 1964)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
P&HF-470-8529	Forward End LOX Suction Ducts Positioning and Holding Fixture (31 October 1964)	X		
TA-435-8535	Horizontal Installation and Removal of Fuel Emergency Drain Valve Adapter Assembly Tool (15 January 1965)	X		
P&HF-435-8536	Horizontal Assembly LOX Prevalves Positioning and Holding Fixture (15 Jan 1965) (11 Jun 1965)	X		X
P&HF-435-8538	Fuel Emergency Drain Duct Bellows Sliding Joint Section Positioning and Holding Fixture (31 August 1964) (21 October 1964)	X		X
AT-435-8539	Outboard LOX PVC Adapter Spool Rotating Assembly Tool (21 September 1964)	X		
AT-435-8540	Outboard Fuel PVC Rotating Assembly Tool (15 October 1964)	X		
AT-435-8541	Inboard Fuel PVC Rotating Assembly Tool (1 October 1964)	X		
HT-435-8543	Thrust Structure LOX and Fuel System Components Hoisting Tool (15 February 1965)	X		
HT-435-8543	Proof-Load Test Report-Thrust Structure LOX and Fuel System Components Hoisting Tool (1 April 1965)		X	
AT-435-8544	Fuel Fill and Drain Duct Sliding Joint Compression Tool Assembly Tool (1 October 1964)	X		
AlF-470-8567	Forward Outboard LOX Suction Duct Flanges to Lower Flanges LOX Tank Bulkhead Alinement Fixture (15 October 1964)	X		
AlF-470-8571	Forward Inboard LOX Suction Duct Flange to Lower Flange LOX Tank Bulkhead Alinement Fixture (1 October 1964)	X		
AT-435-8572	LOX Drain Duct Sliding Joint Compression Tool Assembly Tool (1 October 1964)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
HF-435-8576	LOX Prevalve and Hardware During Removal of LOX TVC Holding Fixture (30 October 1964)	X		
HF-435-8590	LOX Prevalve and Hardware During Removal of LOX PVC Holding Fixture (31 October 1964)	X		
AT-435-8601	Outboard LOX PVC Sliding Joint Compression Tool Assembly Tool (15 March 1965)	X		
AT-435-8602	Outboard Fuel PVC Compression Tool Assembly Tool (15 March 1965)	X		
AT-435-8603	Inboard LOX PVC Compression Tool Assembly Tool (15 March 1965)	X		
AT-435-8604	Inboard Fuel PVC Compression Tool Assembly Tool (15 March 1965)	X		
DJ-335-9022 and DJ-335-9023	Backup Fitting and Thrust Post Shear Tie, Side Plate, and Outboard Channel Drill Jigs (28 April 1964)	X		
DJ-335-9024 and DJ-335-9026	Propellant Duct Upper Support Fitting Drill Jig and Propellant Duct Lower Support Drill Jig (27 May 1964)	X		
DJ-335-9043	Strut to Lower Cap Fittings and Stiffeners at Positions I and II Drill Jig (29 April 1964)	X		
DJ-335-9064 and DJ-335-9065	Splice Plate, Inner Cap, and Lower Thrust Ring Assembly Drill Jig and Lower Ring Inner Cap Splice Plate Drill Jig (19 May 1964)	X		
DJ-335-9167	Holddown Pad, Skin Panel Assembly, and Lower Thrust Ring Drill Jig (1 May 1964)	X		
DJ-335-9189 and DJ-335-9198	Center Engine Support Fittings to Web Assembly Drill Jigs (22 May 1964)	X		
DJ-335-9194	GOX Line Support Clips and Angles to Center Engine Support Drill Jig (12 May 1964)	X		
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
DJ-335-9201 and DJ-335-9202	Center Engine Support Web Assembly and Angle Drill Jigs (1 April 1964)	X		
TrF-J02-10005	Boring Mill Y-Ring Fabrication Fixture (25 January 1963)		X	
CKG-J03-10005	Y-Ring Forward and Aft RP and LOX Tank Joint (25 January 1963)		X	
CKG2-J03-10005	Cutter Set Gage (25 January 1963)		X	
CKG3-J03-10005	Y-Ring Gage (25 January 1963)		X	
CKG4-J03-10005	Y-Ring Check Gage (25 January 1963)		X	
OTG-J03-10005	Y-Ring Optics (25 January 1963)		X	
WF-J03-10006	Y-Ring Details Weld Fixture (25 January 1963)		X	
FD-302-10011 and FD-302-10012	Gore Segment Form Dies (25 January 1963)		X	
WFA12-300-24100	Polar Cap-to-Bulkhead X-Ray Weld Fixture Accessory Personnel Platform (3 October 1963)		X	
TT-322-24733	Fuel Tank Ring Baffle Tool Certification Template (22 October 1963)		X	
A652-1A39264-ITMI and A652-1A49630-IAJ	Drill Jig, S-IV/IU and Apollo/IU Interfaces (24 May 1963)		X	
SATURN IB AND V INSTRUMENT UNIT				
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
AF-495-0141 and AFA-478-0152	260-Inch Diameter Instrument Unit Alinement and Assembly Fixture and S-IB and S-V Inside Work Platforms Assembly Fixture Accessory (20 Apr 1964)	X		
AF-322-13000	S-IB and S-V Instrument Units Structural Assembly Fixture (15 February 1964)	X		
HT-322-13000	S-IB and S-V Instrument Units Hoisting Tool (15 April 1964)	X		
DJ-322-13000	S-IB and S-V Interface Drill Jig (28 April 1964)	X		
ME-1-322-13000	S-IB and S-V Instrument Units Forward Protective Ring (20 April 1964)	X		
ME-2-322-13000	S-IB and S-V Instrument Units Aft Protective Ring (15 April 1964)	X		
SF-322-13000	S-IB and S-V Instrument Units Support Fixture (15 April 1964)	X		
TnTr-322-13000	S-IB and S-V Instrument Units Transportation Trailer (24 April 1964)	X		
HT-322-13001	S-IB and S-V Instrument Units 120-Degree Segment Hoisting Tool (28 April 1964)	X		
RF-1-327-13100	Forward Instrument Unit Router Fixture (31 October 1964)	X		
RF-2-327-13100	Aft Instrument Unit Router Fixture (31 October 1964)	X		
SATURN I SA-5 THRU SA-10				
CKF-12502	Power Unit Assembly 1.5" Gimbal Joint Check Fixture (25 July 1962)		X	
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
DJ-12615	S-I to S-IV Stage Adapter Drill Jig (13 April 1962)		X	
ADF1-302-02180	Upper Ring Segment Assembly, Assembly Drill Fixture (6 February 1962)		X	
ADF1-302-02184	Lower Ring Segment Assembly Drill Fixture (6 February 1962)		X	
ADF-303-02001	Barrel Assembly Drill Fixture (20 February 1962)		X	
AF1-303-02006	Inboard Shear Box Assembly (30M02006) Left and Right Panels Assembly Fixture (23 October 1961)		X	
AF2-303-02006	Inboard Shear Box Assembly, Assembly Fixture (23 October 1961)		X	
AF1-303-02007	Shear Box Assembly (30M02007) Left and Right Panels Assembly Fixture (24 November 1961)		X	
AF2-303-02007	Outboard Shear Box Assembly (30M02007) Assembly Fixture (18 December 1961)		X	
ADF-1-303-02008	Center Ring Assembly, Assembly Fixture (9 February 1962)		X	
RDF-303-02010	Skin Segment Assembly Router Drill Fixture (20 February 1961) (26 February 1961)	X	X	
ADF1-303-02160	Support Assembly, Assembly Drill Fixture (9 February 1962)		X	
ADF1-303-02167	Tee Support Assembly, Assembly Drill Fixture (9 February 1962)		X	
AF-304-02100	Thrust Support Outrigger Assembly, Assembly Fixture (5 February 1962) (17 August 1962)	X	X	
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
AF1-304-02101	Shear Panel Assembly Side C Assembly Fixture (12 January 1962)		X	
AF1-304-02102	Shear Panel Assembly Side D Assembly Fixture (31 January 1962)		X	
ADF1-304-02110 ADF2-304-02110	Outboard Outrigger Thrust Beam Assembly Assembly Drill Fixture (20 February 1962)		X	
ADF1-304-02112	Inner Web Assembly (30M02112) Assembly Drill Fixture (1 February 1962)		X	
ADF1-304-02116	Outer Web Assembly, Assembly Drill Fixture (9 February 1962)		X	
DP-320-00403	Spider Beam Seal Plate Drill Plate (22 March 1962)		X	
DJ-4-320-00400	Engineering Project: Retro-Rocket Fitting Drill (15 June 1963)		X	
AF-321-00402	Upper Spider Beam Assembly Fixture (23 March 1962) (18 April 1962) (27 July 1962)	X	X	X
SAF-321-00402	45-Degree Shroud Subassembly Fixture (16 March 1962)	X		
SAF-321-00404	Radial Beam Assembly Fixture (20 February 1962) (21 March 1962)		X	X
AF-325-00401-1	45-Degree Shroud Assembly, Assembly Fixture (21 March 1962) (6 August 1962) (23 August 1962)	X	X	X
AF-325-00408-1 AF-325-00408-2	45-Degree Shroud Assembly, Assembly Fixture (19 March 1962) (6 August 1962) (23 August 1962)	X	X	X
AF-325-00409-1 AF-325-00409-2	45-Degree Shroud Assembly, Assembly Fixture (19 March 1962) (6 August 1962) (23 August 1962)	X	X	X
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
AF-325-00482	(2nd Stage Adapter) Shear Panel Assembly, Assembly Fixture (1 February 1962)		X	
AF-356-02050	Fin Support Outrigger Assembly, Assembly Fixture (5 February 1962) (10 August 1962)	X	X	
DJ-356-02050	Fin-to-Outrigger Drill Jigs (27 March 1962)		X	
AF1-356-02051	Shear Panel Assembly Side A Assembly Fixture (30 November 1961)		X	
AF1-356-02052	Shear Panel Assembly Side B Assembly Fixture (31 January 1962)		X	
ADF-356-02072	Support Beam Assembly, Assembly Drill Fixture (20 February 1962) (9 March 1962)	X	X	
AF1-372-05200	Payload Adapter Assembly Fixture (13 September 1962)		X	
AF2-372-05200	Payload Adapter Assembly Fixture (13 September 1962)		X	
AF-378-05000	154-Inch Instrument Unit Structure Assembly Fixture (21 May 1962)	X		
SAF1-378-05000	Instrument Unit Structure Subassembly Fixture (30 March 1962)	X		
STA-395-2005	Upper and Lower Thrust Rings Assembly Station (27 December 1961)		X	
STA-395-2017	Thrust Structure Assembly, Assembly Station No. 1 (25 May 1962) (21 August 1962)	X	X	
* AFA-400-10013	Tail Section Assembly Fixture Accessory (14 September 1962)		X	
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TOOL NUMBER	TITLE	ROUGH DRAFT	FINAL	REVISION
AF1-400-10537	Flight Engine Purge System Assembly Fixture (25 May 1962)		X	
AFA-415-00000	105-Inch Diameter Oxidizer Tank Assembly Fixture Accessory (22 May 1962)		X	
MiT-415-00000	105-Inch Oxidizer Tank Assembly Heater Blanket (25 June 1962)		X	
ADJ-440-03594, -03595, -03596, and -03597	Flame Curtain Assembly Drill Jigs (30 July 1962) (3 August 1962) (1 April 1963)		X	X
FD-440-50811	Engine Drain Line Bracket Form Die (25 May 1962)		X	
FD-440-51156	Drain Line Bracket Forming Die (16 October 1962)		X	
WF-440-85036	Hydraulic Panel Frame Assembly Weld Fixture (5 July 1962)		X	
P&HF-445-03020	Upper Flange Elbow Assembly Positioning and Holding Fixture (18 July 1962)		X	
DJ2-445-10004	LOX Container Center Section Assembly Drill Jig (7 August 1962)		X	
DJ-450-03590, 91, 92, and 93	Outboard Curtain Support Drill Jigs (21 November 1962)		X	
WF1-478-40126	154-Inch Instrument Container Outer Shell Weld Fixture (21 June 1962)		X	
AF-480-10002	LOX-SOX Disposal System Assembly Fixture (10 August 1962)		X	
P&HF-480-10003	Fuel Pressure System Positioning and Holding Fixture (5 June 1962)		X	
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TOOL NUMBER	TITLE	ROUGH DRAFT		FINAL		REVISION
ADF-480-29900	Retro-Rocket Cover Assembly, Assembly Drill Fixture (29 May 1962) (14 August 1962)	X		X		
EAS-495-0001	Bill of Material and Specification for Station No. 3 North Gantry (17 October 1962)				X	
DJ-495-0063	Sleeve Assembly Drill Jig (25 May 1962)				X	
CkF-495-0073	Power Unit Assembly 6- and 8- Inch Gimbal Joint Check Fixture (5 October 1962)				X	
AF-496-3000	Main Cluster Assembly Fixture (25 June 1962) (21 September 1962) (2nd Rev, 15 November 1962)	X				X
EAF-496-3000	Saturn Fixture Electrical Installation (13 November 1961)				X	
	SA-5 Handling Equipment (16 April 1962) (20 July 1962)				X	X
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