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PRATT & WHITNEY JT8D ENGINE MANUAL
FRONT COMPRESSOR GROUP CLEANING

(13 PAGES)

JT8D ENGINE MANUAL (PN 773128)

FRONT COMPRESSOR GROUP - CLEANING-01

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CLEANING PROCEDURES

SPOP 16 - WET GLASS BEAD BLAST CLEANING

Oper. No.	Description/Operation
1	Degrease, if necessary, with SPOP 209.
2	Mask to prevent damage to identification marking and to prevent material entrapment.
3	Set machine air pressure at 40 - 50 psi.
R R	CAUTION: USE GLASS BEADS ON HOT SECTION ENGINE PARTS WITH CAUTION. GLASS BEADS/PARTICLES THAT GET CAUGHT CAN CAUSE DETERIORATION OF MATERIAL. DO NOT DWELL IN ANY ONE AREA FOR MORE THAN TWO SECONDS; USE CONTINUOUS MOTION.
4	Blast with glass bead abrasive solution (SPS 235), as necessary, to remove scale. There must always be a 3 - 4 inch nozzle-to-part distance at a 45 - 60 degree angle to the work distance.
5	Pressure spray rinse with cold or hot water.
6	Remove masking.
7	Blow dry with air.
8	Apply corrosion inhibitor with SPOP 5, as necessary.

WARNING: REFER TO THE MANUFACTURER'S MATERIAL SAFETY DATA SHEETS FOR CONSUMABLE MATERIAL'S INFORMATION SUCH AS: HAZARDOUS INGREDIENTS, PHYSICAL/CHEMICAL CHARACTERISTICS, FIRE, EXPLOSION, REACTIVITY, HEALTH HAZARD DATA, PRECAUTIONS FOR SAFE HANDLING, USE AND CONTROL MEASURES.

CLEANING PROCEDURES

R SPOP 18 - ONE-STEP ALKALINE RUST REMOVER FOR CLEANING TITANIUM PARTS ONLY

Oper. No.	Description/Operation
1	Degrease, if necessary, with SPOP 209.
	CAUTION: ALKALINE RUST REMOVER CLEANING TANKS USED FOR TITANIUM MUST BE RESTRICTED TO TITANIUM PARTS ONLY.
R 2 R	Soak in one of the alkaline rust remover solutions that follow; use either Method 1 or 2.
	NOTE: Parts should be put fully in solution only long enough to get optimum results.
R	a. Method 1 (Time: 1 - 4 minutes)
R	PS 240 at 180° - 200°F (82° - 93°C)
R	SPS 2 at 180° - 200°F (82° - 93°C)
R	SPS 5 at 180° - 200°F (82° - 93°C)
R	SPS 7 at 180° - 200°F (82° - 93°C)
R	SPS 12 at 180° - 200°F (82° - 93°C)
R	SPS 22 at 180° - 200°F (82° - 93°C)
R	SPS 25 at 180° - 200°F (82° - 93°C)
R	SPS 52 at 180° - 200°F (82° - 93°C)
R	SPS 89 at 180° - 200°F (82° - 93°C)
R	SPS 91 at 180° - 200°F (82° - 93°C)
R	SPS 115 at 180° - 200°F (82° - 93°C)
R	SPS 116 at 180° - 200°F (82° - 93°C)
R	SPS 117 at 180° - 200°F (82° - 93°C)
R	SPS 129 at 180° - 200°F (82° - 93°C)
R	SPS 141 at 180° - 200°F (82° - 93°C)
R	SPS 142 at 180° - 200°F (82° - 93°C)

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CLEANING PROCEDURES

R SPOP 18 - ONE-STEP ALKALINE RUST REMOVER FOR CLEANING TITANIUM PARTS ONLY (Continued)

Oper. No.	Description/Operation
R	b. Method 2 (Time: 15 - 30 minutes)
R	SPS 158-1 at 160° - 170°F (71° - 77°C)
R	SPS 158-2 at 160° - 170°F (71° - 77°C)
R	SPS 158-3 at 130° - 150°F (54° - 66°C)
R	SPS 158-4 at 130° - 150°F (54° - 66°C)
R	SPS 158-5 at 180° - 200°F (82° - 93°C)
R	SPS 158-6 at 180° - 200°F (82° - 93°C)
R	SPS 158-7 at 180° - 200°F (82° - 93°C)
R	SPS 158-8 at 180° - 200°F (82° - 93°C)
R	SPS 158-9 at 160° - 170°F (71° - 77°C)
R	SPS 158-10 at 160° - 170°F (71° - 77°C)
R	SPS 158-11 at 160° - 170°F (71° - 77°C)
R	SPS 158-12 at 160° - 170°F (71° - 77°C)
3	Pressure spray rinse with water over the alkaline solution. Dip in cold water and then pressure spray rinse in cold water.
4	Put part fully in hot water at 150° - 200°F (66° - 93°C) until the temperature of the part is at the water temperature to flash dry.

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CLEANING PROCEDURES

SPOP 19 - DRY PLASTIC BLAST (PRESSURE-TYPE MACHINE OR SUCTION-TYPE MACHINE)

R NOTE: This procedure is for removal of RTV rubber, PWA 60 graphite varnish, PWA 474 antigalling compound, and PWA 544 sealant
R from compressor blades, disks, and hubs. Operators who use
R SPOP 19 to remove antigallant and RTV rubber from titanium
R blades and disks will find the use of SPOP 18 before SPOP 19
R will be more effective.

For the removal of paint and varnish, refer to the specific repair in Engine Manual and CAUTION before Operation No. 4.

R The removal of large pieces of RTV with a razor or sharp
R plastic scraper will increase the efficiency of the blasting process.

R Generally pressure-type machines are more effective than
R suction-type machines.

Oper. No.	Description/Operation
R 1	Degrease with SPOP 209 to prevent contamination of the R media. R
R 2	Mask, as necessary, so that material will not get caught R inside the part. Mask plasma coated airseals.
3	Set machine air pressure, as follows: a. For pressure-type machine: 30 - 40 psi. b. For suction-type machine: 60 - 80 psi.

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CLEANING PROCEDURES

SPOP 19 - DRY PLASTIC BLAST (PRESSURE-TYPE MACHINE OR SUCTION-TYPE MACHINE) (Continued)

Oper. No.	Description/Operation
	CAUTION: PLASTIC BLAST WILL DEGRADE THE ANODIZED COATING ON ALUMINUM. IF SPOP 19 IS USED ON ALUMINUM, SURFACE TREATMENT BY SPOP 42 WILL BE NECESSARY. IF SPOP 19 IS USED ON MAGNESIUM, THE CHROMATE CONVERSION COATING MUST BE REPLACED BY SPOP 41.
R 4 R	Blast with plastic blast media (PMC 3300, 3304, 3306 or SPMC 167), as necessary. There must be a 3 - 4 inch nozzle-to-part distance at a 45 - 60 degree angle to the work surface.
5	Blow clean with air. If necessary, clean by SPOP 209 and pressure spray rinse with hot water to remove any remaining plastic media.
6	Remove masking.
7	Apply corrosion inhibitor with SPOP 5, as necessary.

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CLEANING PROCEDURES

SPOP 208 - DEGREASING OF PARTS BY SOLVENT WIPING

R

Oper. No. | Description/Operation

1 For Titanium and Non-titanium Parts:

WARNING: THE SOLVENTS THAT FOLLOW ARE FLAMMABLE.

CAUTION: DO NOT IMMERSE IN SOLVENTS THOSE PART ASSEMBLIES THAT CONTAIN NON-METALLIC MATERIALS.

SIZED CHEESECLOTH CONTAINS RESIN BINDERS THAT CAN DISSOLVE IN SOLVENTS AND CAUSE CONTAMINATION OF BOND SURFACES. USE SOLVENT DISPENSERS THAT SQUIRT OR POUR TO PREVENT REPEATED DIPPING AND CONTAMINATION BY WORK CLOTHS.

a. Wipe part with clean, white, lint-free, unsized cheesecloth (GA 100-11) wet with one of the solvents that
R follow. See Table 1 for solvents approved for use on
R metallic parts and Table 2 for solvents approved for use
R on non-metallic parts.

R NOTE: Wear clean cotton gloves to touch clean parts to be bonded.

R

b. Air dry.

NOTE: Do not use compressed air to dry part before adhesive bonding or painting; some compressed air may contain oil vapors.

R Cleaner solvent (PMC 8904, 9060, SPMC 175 or 176) has a lower vapor pressure than MEK (PMC 1820 or 9076) or acetone (PMC 9008).

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CLEANING PROCEDURES

SPOP 208 - DEGREASING OF PARTS BY SOLVENT WIPING (Continued)

R Solvents Approved for Use on Metallics (See NOTE.)

When to Use	Flash Point <140°F (60°C) PMC 9016	Flash Point <140°F (60°C) PMC 1820, 8904, 9008, 9060, 9076, 9094, SPMC 175, or 176	Flash Point ≥140°F (60°C) PMC 8910, 8914, 8917, 8920, SPMC 156, or 168
FPI (Local)	X	X	-
General Wipe	X	X	X
Pre-Adhesive Bonding	X	X	-
Pre-Brazing	X	X	X
Pre-Painting	X	X	-
Pre-Plasma Spraying	X	X	-
Pre-Welding	X	X	X

NOTE: The names of the approved solvents follow; use only as indicated.

PMC 1820 Methyl Ethyl Ketone - Reagent Grade
PMC 8904 Cleaner Solvent
PMC 8910 Dielectric Solvent
PMC 8914 Cleaner Solvent
PMC 8917 Handwiping Solvent
PMC 8920 Dielectric Solvent
PMC 9008 Acetone
PMC 9016 Isopropyl Alcohol - Reagent Grade
PMC 9060 Cleaner Solvent
PMC 9076 Methyl Ethyl Ketone - Technical Grade
PMC 9094 Isopropyl Alcohol - Technical Grade
SPMC 156 Cleaner Solvent
SPMC 168 Cleaner Solvent
SPMC 175 Cleaner Solvent
SPMC 176 Cleaner Solvent

Solvents Approved For Use On Metallics
Table 1

WARNING: REFER TO THE MANUFACTURER'S MATERIAL SAFETY DATA SHEETS FOR CONSUMABLE MATERIAL'S INFORMATION SUCH AS: HAZARDOUS INGREDIENTS, PHYSICAL/CHEMICAL CHARACTERISTICS, FIRE, EXPLOSION, REACTIVITY, HEALTH HAZARD DATA, PRECAUTIONS FOR SAFE HANDLING, USE AND CONTROL MEASURES.

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CLEANING PROCEDURES

SPOP 208 - DEGREASING OF PARTS BY SOLVENT WIPING (Continued)

Non-Metallic Part Material			Solvents Approved for Use on Non-Metallics#	
			Flash Point <140°F (60°C)	
Spec. No.	Description of Material		PMC 9016	PMC 1820, 8904, 9008, 9060, 9076, 9094, SPMC 175, or 176
PWA 410	Fiberglass Structures, Laminated Moldings		X	X
PWA 411	Cloth, Glass, Epoxy Resin Impregnated		X	X
PWA 446	Polyurethane Resin, Foaming		X, *	----
PWA 459	Fabric, Aromatic Polyamide, Epoxy Resin Impregnated		X	X
PWA 460	Laminated Structures, Aromatic Polyamide Fabric - Epoxy Resin Matrix		X	X
PWA 479	Molding Compound, Polyamide, Composite		X, $	X, $
PWA 628	Foam, Molded Polyurethane		X, •	----
PWA 36013	Plastic Film, Special Quality Fluorohalocarbon		X, •	----
PWA 36014	Teflon Coating		X, •	----

= See NOTE, Table 1. $ = PWA 83-D2 • = PWA 83-D4

Solvents Approved For Use On Non-Metallics For General Wiping, Pre-Painting, And Pre-Adhesive Bonding
Table 2

WARNING: REFER TO THE MANUFACTURER'S MATERIAL SAFETY DATA SHEETS FOR CONSUMABLE MATERIAL'S INFORMATION SUCH AS: HAZARDOUS INGREDIENTS, PHYSICAL/CHEMICAL CHARACTERISTICS, FIRE, EXPLOSION, REACTIVITY, HEALTH HAZARD DATA, PRECAUTIONS FOR SAFE HANDLING, USE AND CONTROL MEASURES.

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CLEANING PROCEDURES

SPOP 208 - DEGREASING OF PARTS BY SOLVENT WIPING (Continued)

Non-Metallic Part Material		Solvents Approved for Use on Non-Metallics# Flash Point <140°F (60°C)	
Spec. No.	Description of Material	PMC 9016	PMC 1820, 8904, 9008, 9060, 9076, 9094, SPMC 175, or 176
PWA 36151	Composite Airfoils, Carbon Fiber Reinforced	X	X
PWA 36408	Fabric, Carbon Fiber and Fiberglass, Polyimide Resin Impregnated	X, $, *	X, $
PWA 36414	Fabric, Aluminum Borosilicate Glass Fiber, Epoxy Resin Impregnated	X, $, *	X, $
PWA 36422	Fabric, Fiberglass, Epoxy Resin Impregnated	X	X
PWA 36426	Molding Compound, Poly-etherimide Composite	X, *	----
PWA 36442	Fluoroelastomer Sheet	X, *	----
PWA 36509	Primer, Polyurethane	X, *	----
PWA 36510	Coating, Polyurethane, Erosion Resistant	X, *	----
PWA 36516	Fluoroelastomer Coating	X, *	----

= See NOTE, Table 1. $ = PWA 83-D2 * = PWA 83-D4

Solvents Approved For Use On Non-Metallics For General Wiping, Pre-Painting, And Pre-Adhesive Bonding Table 2 (Continued)

WARNING: REFER TO THE MANUFACTURER'S MATERIAL SAFETY DATA SHEETS FOR CONSUMABLE MATERIAL'S INFORMATION SUCH AS: HAZARDOUS INGREDIENTS, PHYSICAL/CHEMICAL CHARACTERISTICS, FIRE, EXPLOSION, REACTIVITY, HEALTH HAZARD DATA, PRECAUTIONS FOR SAFE HANDLING, USE AND CONTROL MEASURES.

CLEANING PROCEDURES

SPOP 252 - REMOVAL OF VARNISH OR ANTIGALLING COMPOUNDS FROM STEEL OR TITANIUM

	Oper. No.	Description/Operation
R	1	Degrease, if necessary, parts with SPOP 209.
R R R R R	2	Put parts fully in PS 225 sodium hydroxide solution (11%) at 140° - 180°F (60° - 82°C) for approximately 30 minutes, or clean titanium parts with SPOP 18 or steel parts with SPOP 203.
	3	Flush fully with clean water to remove alkali.
R	4	CAUTION: IMMERSION IN SPS 38 CHROMIC ACID SOLUTION WILL RESULT IN SERIOUS DEGRADATION OF ANY HARDFACING THAT COULD BE PRESENT ON BLADE SHROUDS.
R		Put parts fully in SPS 38 chromic acid solution at 170° - 180°F (77° - 82°C) for 30 - 40 minutes.
R R R	5	Put parts fully in cold water. Pressure spray rinse over a cold water tank.
R R R R R	6	Put parts fully in hot water at 150° - 200°F (66° - 93°C) until the temperature of the part is at the water temperature to flash dry.

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CLEANING PROCEDURES

SPOP 257 - REMOVAL OF GRAPHITED VARNISH PWA 60 AND ANTI-GALLING COMPOUND PWA 474 FROM COMPRESSOR BLADE ROOTS, DISK AND HUB SLOTS

Oper. No.	Description/Operation
	NOTE: Removal may be accomplished by either Method I or II.
	Method I
1	A. Clean titanium parts with SPOP 18.
	B. Clean steel parts, including nickel-cadmium plated, with SPOP 203.
	CAUTION: PARTS MUST BE DRY TO AVOID CONTAMINATION OF THE STRIPPING SOLUTION WITH WATER.
2	Rinse in hot water. Dry thoroughly, using air blast if necessary.
	CAUTION: AREAS ON PARTS WITH PWA 46 TUNGSTEN CARBIDE, ALL MOLYBDENUM COATINGS, OR ANY OTHER PLASMA SPRAYED/ APPLIED COATINGS SHOULD BE PROTECTED AGAINST CONTACT WITH SPMC 68.
3	Immerse in SPMC 68 stripping bath for 15 minutes. Parts must be immersed completely within the lower phase of the two-layered liquid.
	CAUTION: AVOID CONTAMINATING STRIPPING SOLUTION WITH WATER.
	TITANIUM PARTS MUST BE PROCESSED SEPARATELY.
4	Remove parts from stripping bath and spray rinse with water. Brush with a nylon or tampico brush as required to remove residual antigallant.
5	Inspect parts. If antigallant removal is not complete, do again Operation No. 2, 3, and 4, as necessary. Do not exceed 60 minutes total immersion time.

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CLEANING PROCEDURES

SPOP 257 - REMOVAL OF GRAPHITED VARNISH PWA 60 AND ANTI-GALLING COMPOUND PWA 474 FROM COMPRESSOR BLADE ROOTS, DISK AND HUB SLOTS (Continued)

	Oper. No.	Description/Operation
	6	Final rinse in hot water, and air dry.
		Method II
	1	A. Clean titanium parts with SPOP 18.
		B. Clean steel parts, including nickel-cadmium coated parts, with SPOP 203.
R	2	CAUTION: TITANIUM PARTS MUST BE PROCESSED SEPARATELY.
		IT IS IMPORTANT TO PUT PARTS FULLY IN THE SOLUTION AT LEAST TWO INCHES BELOW THE BOTTOM OF THE SEAL.
		REFER TO SPS 103 FOR SEAL MAINTENANCE INSTRUCTIONS.
R		Put parts fully in SPMC 103 stripper for one to three hours at 140° - 150°F (60° - 66°C).
	3	Remove parts from stripping solution and permit excess solution to drain back into the tank.
R	4	Dip in a cold water tank; then, pressure spray rinse with cold water. Brush with nylon or tampico brush, as necessary, to remove remaining antigallant.
R	5	If antigallant is remaining, do Operations 2 - 4 again. Do not exceed six hours total time fully in the solution.
R R R R	6	Put parts fully in hot water at 150° - 200°F (66° - 93°C) until the temperature of the part is at the water temperature to flash dry.
R	7	Apply corrosion inhibitor with SPOP 5, as necessary.

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