CHAPTER 20

STANDARD PRACTICES

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CHAPTER 20

STANDARD PRACTICES

20-10 Cleaning

WARNING

Review appropriate Safety Data Sheet (SDS) when working in proximity to hazardous materials. Specific recommendations for use of personal protective equipment are located in the SDS.

A. Cleaning Exterior Surfaces

NOTE

Remove turbine exhaust stains from engine cowling, tailcone, empennage, and tail rotor blades after every flight to prevent permanent discoloration.

CAUTION

Refer to § 20-10 Part B for cleaning windshield and windows.

CAUTION

Never use high-pressure spray to clean helicopter. Never blow compressed air into main or tail rotor blade tip drain holes, pitot tube, or static ports.

CAUTION

Wash helicopter exterior surfaces with mild soap (pH between 7 & 9) and water. Harsh abrasives, alkaline soaps, or detergents can scratch painted or plastic surfaces, or cause corrosion of metal. Protect areas where cleaning solution could cause damage.

1. Rinse away loose dirt and debris from exterior surface with clean water.
2. Apply mild soap (pH between 7 & 9) and clean warm water solution to exterior surface using a clean, soft cloth, sponge, or soft bristle brush. Use caution near antennas and sensitive equipment.
3. Remove oil and grease using a cloth wetted with aliphatic naphtha.
4. Rinse all surfaces thoroughly.
5. If desired, polish painted surfaces with a good quality automotive wax using soft cleaning cloths, or a chamois cloth, free of abrasive debris.

20-10 Cleaning (continued)

B. Cleaning Windshield and Windows

1. Remove dirt, mud, and other loose particles from exterior surfaces with clean water.
2. Wash with mild soap (pH between 7 & 9) and warm water or with aircraft plastic cleaner. Use a soft cloth or sponge in a straight back and forth motion. Do not rub harshly.
3. Remove oil and grease with a cloth moistened with isopropyl alcohol (rubbing alcohol) or aliphatic naphtha.

CAUTION

Do not use gasoline, other alcohols, benzene, carbon tetrachloride, thinner, acetone, or window (glass) cleaning sprays.

4. After cleaning plastic surfaces, apply a thin coat of hard polishing wax. Rub lightly with a soft cloth. Do not use a circular motion.

CAUTION

Windshield surface must be water-repellent for good visibility in rain. When using a new cleaning or polishing product on windshield, verify water beads on surface before flying.

5. On acrylic windows (standard windshield), scratches can be removed by rubbing with jeweler's rouge followed by hand polishing with commercial plastic polish. Use a figure eight motion with polishing.

NOTE

Impact-resistant windshields are made from polycarbonate with a protective hardcoat and cannot be polished.

C. Cleaning Seat Assemblies and Back Rests

1. Vacuum and brush, then wipe with damp cloth. Dry immediately.
2. Soiled upholstery, except leather, may be cleaned with a good upholstery cleaner suitable for the material. Follow manufacturer's instructions. Avoid soaking or harsh rubbing.
3. Leather should be cleaned with saddle soap or a mild hard soap and water.

D. Cleaning Carpet

Remove loose dirt with a whisk broom or vacuum. For soiled spots and stains, use nonflammable dry cleaning liquid.

20-10 Cleaning (continued)

E. Cleaning or Rinsing RR300 Engine

Follow published Rolls-Royce guidance (subject to revision) to maximize RR300 engine corrosion prevention:

- RR300 Operation and Maintenance Manual (OMM) Task 05-50-00-100-801, Clean the Engine after Operation in a Corrosive Environment, and
- NTO (Notice To Operators) No. RR300-020, RR300 Engine Wash Procedures.

Refer to § 12-71 for drainage spotface inspection during cleaning or rinsing of RR300 engine.

20-20 Lubrication

WARNING

Review appropriate Safety Data Sheet (SDS) when working in proximity to hazardous materials. Specific recommendations for use of personal protective equipment are located in the SDS.

All R66 bearings are sealed or self-lubricating and do not require periodic lubrication.

The engine oil tank, the main and tail rotor gearboxes, and the hydraulic reservoir require servicing when indicated by sight gage level. Additionally, change engine, gearbox, or hydraulic oil and clean respective sight gage when oil becomes so dirty its level cannot be determined. Change hydraulic oil if notedly odorous.

When installing a new or overhauled main rotor gearbox, replace filter at first 100-hour inspection after installation. Thereafter, replace filter at scheduled intervals per § 1-90. When installing a new or overhauled tail rotor gearbox, drain and flush after first 4 hours of flight or first chip light, whichever occurs first. Thereafter, drain and flush gearbox at scheduled intervals per § 1-90.

Servicing procedures are located in Chapter 12.

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20-30 Torque Requirements

A. Tool Calibration

Dimensions and tolerances given in this manual are critical. Calibrate measuring tools per manufacturers recommendation at least once a year, when tool is dropped, misused, or calibration is suspect. This includes torque wrenches, micrometers, calipers, dial indicators, and spring scales.

WARNING

Proper torque is critical. Always use calibrated wrenches and undamaged, properly lubricated (where applicable) hardware. Ensure clamping surfaces are clean, and clamp only bare metal or wet-primed surfaces. Improper torque or dirty or painted clamping surfaces may result in loss of clamp-up, hardware or part damage, and premature failure.

B. Torque Value

Torque fasteners to standard dry values listed in § 20-32 unless otherwise specified. If torque is applied by rotating bolt, increase torque value by 10% to account for higher friction at bolt head and shank.

For example, the torque wrench setting for an NAS1305 bolt used with a NAS1068 nutplate is determined as follows:

NAS1305 bolt (5 indicates 5/16 inch size) dry torque per § 20-32	240 in.-lb
Add 10% because torque must be applied at bolt head	+ 24 in.-lb
Torque wrench setting	264 in.-lb

C. Secondary Locking Mechanism

A secondary locking mechanism is required on all critical fasteners. B330 stamped nuts (palnuts) serve as secondary locking mechanisms in most areas on the helicopter, and are torqued per § 20-32. The R66 Illustrated Parts Catalog (IPC) lists secondary locking mechanisms for specific fasteners.

D. Critical Fastener

A critical fastener is one which, if removed or lost, would jeopardize safe operation of the helicopter. This includes joints in the primary control system, and non-fail-safe structural joints in the airframe, landing gear, and drive system.

WARNING

Assembly of flight controls is critical and requires inspection by a qualified person. If a second person is not available, RHC recommends the installer take a 5-minute break prior to inspecting flight control connections the installer has assembled.

Given	Symbols
Y = Unknown	Y = Torque wrench setting
T = 135 in.-lb	T = Torque applied to fastener
L = 10 in.	L = Length of torque wrench
A = 1.5 in.	A = Length of adapter

When using an adapter that lengthens torque wrench effective length, calculate torque wrench setting using the formula below:

EXAMPLE

$$\textbf{Solve for Y} = \frac{\textbf{T x L}}{\textbf{L + A}} = \frac{\textbf{135 x 10}}{\textbf{10 + 1.5}} = \frac{\textbf{1350}}{\textbf{11.5}} = \textbf{117.39}$$

Set torque wrench to 117 in.-lb to torque fastener to 135 in.-lb.

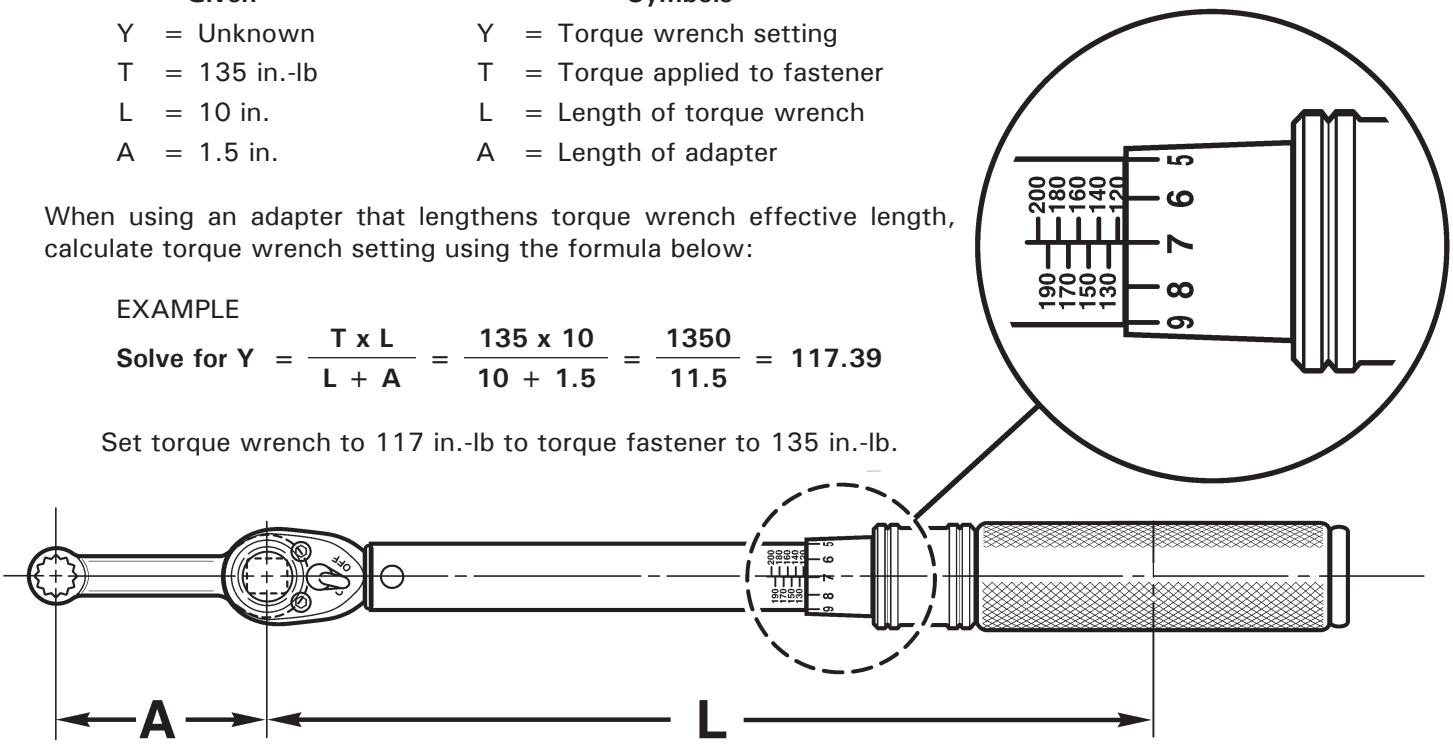


FIGURE 20-1 LENGTHENING TORQUE WRENCH EFFECTIVE LENGTH

Given	Symbols
Y = Unknown	Y = Torque wrench setting
T = 135 in.-lb	T = Torque applied to fastener
L = 10 in.	L = Length of torque wrench
A = 1.5 in.	A = Length of adapter

When using an adapter that shortens the torque wrench effective length, calculate torque wrench setting using the formula below:

EXAMPLE

$$\textbf{Solve for Y} = \frac{\textbf{T x L}}{\textbf{L – A}} = \frac{\textbf{135 x 10}}{\textbf{10 – 1.5}} = \frac{\textbf{1350}}{\textbf{8.5}} = \textbf{158.82}$$

Set torque wrench to 159 in.-lb to torque fastener to 135 in.-lb.

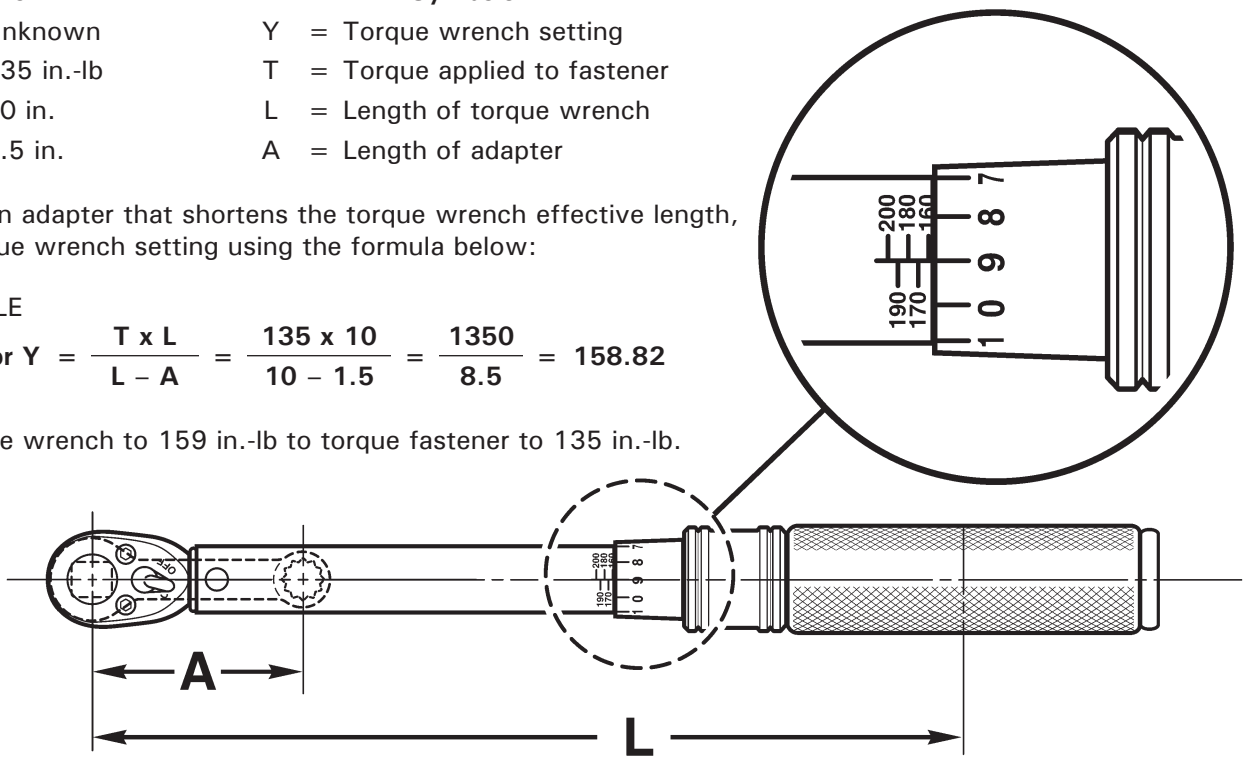


FIGURE 20-2 SHORTENING TORQUE WRENCH EFFECTIVE LENGTH

20-30 Torque Requirements (continued)

E. Torque Requirements

CAUTION

Never substitute AN bolts for NAS bolts. NAS bolts have higher tensile strength.

1. Any self-locking nut whose drag has deteriorated appreciably must be replaced. Damaged hardware must be replaced.
2. Bolt and nut are to be clean and dry except when assembly procedure specifies anti-seize or thread-locking compound.
3. If chattering or jerking occurs, disassemble and re-torque fastener.
4. If special adapters which change effective length of torque wrench are used, final torque value must be calculated using formulas in Figures 20-1 and 20-2.
5. Unless otherwise specified, proper thread engagement requires:
   a. If palnut is not required, one to four threads exposed beyond primary nut.
   b. If palnut is required, two to four threads exposed beyond primary nut.
   c. For B526-8 screws, one to five threads exposed beyond primary nut.

WARNING

Proper thread engagement ensures proper locking of fastener. Exceeding maximum thread exposure beyond primary nut may allow nut to seat against unthreaded shank, resulting in insufficient joint clamping.

6. Refer to Part A. Torque wrenches must be calibrated annually, when dropped, or when a calibration error is suspected.

20-31 Torque Stripe

WARNING

Refer to Safety Data Sheet (SDS) and observe precautions when working in proximity to hazardous materials.

Refer to Figure 5-1. Apply lacquer-paint Torque Seal® to all critical fasteners after palnut installation in a stripe ("torque stripe") extending from the fastener's exposed threads across both nuts and onto the component. Subsequent rotation of the nut or bolt can be detected visually. Position torque stripes for maximum visibility during preflight inspections. Approved Torque Seal® is listed in § 20-74.

If, during inspection, the remaining torque stripe on a fastener is insufficient to determine joint integrity, then remove accompanying palnut as required and apply specified torque to fastener. If fastener moves, disassemble joint and inspect parts for damage such as fretting, thread deformation, hole elongation, etc.; replace damaged parts. If fastener does not move, install new palnut as required & standard torque per § 20-32. Torque stripe fastener per Figure 5-1.

20-32 Standard Torques

NOTE

1. Torque values are in inch-pounds unless otherwise specified.
2. Torque values include nut self-locking torque.
3. Increase torque values 10% if torqued at bolt head.
4. Wet indicates threads lubricated with A257-9 anti-seize.
5. For elbow and tee fittings which require alignment, torque to indicated value, then tighten to desired position.
6. Tolerance is ± 10% unless range is specified.
7. Unless otherwise specified, thread sizes 8-32 and smaller are not used for primary structure and do not require control of torques.

FASTENER SERIES		SIZE	EXAMPLE FASTENER	TORQUE (IN.-LB)
NAS6603 thru NAS6608 Bolts NAS1303 thru NAS1308 Bolts NAS623 Screws NAS1351 & NAS1352 Screws NAS600 thru NAS606 Screws		10-32	NAS6603	50
		1/4-28	NAS6604	120
		5/16-24	NAS6605	240
		3/8-24	NAS6606	350
		7/16-20	NAS6607	665
		1/2-20	NAS6608	995
A142 screws AN3 Bolts AN4 Bolts AN6 Bolts AN8 Bolts	AN502 Screws AN503 Screws AN509 Screws AN525 Screws MS24694 Screws MS27039 Screws	10-32	A142-1, -3, -4; AN3	37
		1/4-28	AN4	90
		3/8-24	AN6	280
		1/2-20	AN8	795
STAMPED NUTS (PALNUTS) Palnuts are to be used only once and replaced with new when removed.		10-32	B330-7 (MS27151-7)	6–15
		1/4-28	B330-13 (MS27151-13)	11–25
		5/16-24	B330-16 (MS27151-16)	20–40
		3/8-24	B330-19 (MS27151-19)	29–60
		7/16-20	B330-21 (MS27151-21)	42–85
		1/2-20	B330-24 (MS27151-24)	54–110
TAPERED PIPE THREADS		1/8-27	See note 5	60
			Straight fittings only	120
		1/4-18	See note 5	85
			Straight fittings only	170
		3/8-18	See note 5	110
			Straight fittings only	220
		1/2-14	See note 5	160
			Straight fittings only	320
		3/4-14	See note 5	230
			Straight fittings only	460
ROD END JAM NUTS (AN315 and AN316)		10-32	AN315-3	15
		1/4-28	AN316-4	40
		5/16-24	AN316-5	80
		3/8-24	AN316-6	110

20-33 Special Torques

Special torques supersede standard torques listed in § 20-32.

NOTE

1. Torque values are in inch-pounds unless otherwise specified.
2. Torque values include nut self-locking torque.
3. Increase torque values 10% if torqued at bolt head.
4. Wet indicates threads lubricated with A257-9 anti-seize.
5. For elbow and tee fittings which require alignment, torque to indicated value, then tighten to desired position.
6. Tolerance is ± 10% unless range is specified.
7. Unless otherwise specified, thread sizes 8-32 and smaller are not used for primary structure and do not require control of torques.

AREA	FASTENER	TORQUE (IN.-LB)
AIR CONDITIONING (OPTIONAL EQUIPMENT)	(1) D795-8 line assembly, B-nuts	150
	(1) D799-2 switch assembly	90
	(1) D799-3 switch assembly	90
	(1) D799-9 switch assembly	90
	(1) G783 condenser, dessicant cap	100
	(1) G784-1 evaporator assembly, inlet B-nut to TXV	210
	(1) G794-1 hose assembly, B-nuts	210
	(1) G794-2 hose assembly, B-nuts	210
	(1) G794-3 hose assembly, B-nuts	150
	(1) G810-1 line assembly, B-nuts	210
	(1) G811-1 line assembly, B-nuts	150
	(2) AN924-8D nuts	360
	(8) MS27039C1-07 screws at condenser fans	20
	(2) 91292A135 screws (apply one drop B270-20 adhesive to threads)	70
COOLING SYSTEM (ENGINE AND MAIN ROTOR GEARBOX OILS)	(1) B289-2 bolt, drain	70
	(1) B563-2 sight gage	150
	(1) D205-19 hose assembly, B-nuts	200
	(1) D205-20 hose assembly, B-nuts	200
	(1) F723-1 line assembly, B-nuts	675
	(1) F723-2 line assembly, B-nuts	245
	(1) F723-3 line assembly, B-nuts	245
	(1) F723-4 line assembly, B-nuts	245
	(1) F724-1 line assembly, B-nuts	120
	(1) F724-2 line assembly, B-nuts	285
	(1) F724-3 line assembly, B-nuts	285
	(2) AN815-8D unions, on F649-1 oil cooler	300
	(2) AN832-8D unions, at firewall	230-260

20-33 Special Torques (continued)

AREA	FASTENER	TORQUE (IN.-LB)
COOLING SYSTEM (ENGINE & MAIN GEARBOX OILS) (Cont'd)	(1) AN832-10D union, at firewall	330-360
	(2) AN924-8D nuts, at firewall	150
	(1) AN924-10D nut, at firewall	180
	(2) AN924-6D nuts, securing F823-1 thermostat assembly to firewall	120
	(2) AS5169D04L fitting, on F649-1 oil cooler	58
	(1) MS28034-1 oil temperature sender, to tank	120
DOOR HINGES AND GAS SPRINGS	(16) MS51861-37C screws, securing door hinge assemblies	36
	(2) 21FKF-518 (or 94830A030) nuts, securing G904-1 gas spring ball studs at baggage compartment door	100
	(2) 21FKF-518 (or 94830A030) nuts, securing D575-1 gas spring ball studs at aft doors	100
	(2) C394-2 ball stud, at forward doors, to frame (B270-10 on thds)	150
	(2) D575-2 and (2) D575-3 ball joints, at forward doors' D573-4 rods	37
DRIVE SYSTEM	(2) F650-1 bolt, forward main rotor gearbox and G201 frame mounts	50 FT-LB, wet Bolt head or nut
	(2) F650-2 bolt, aft main rotor gearbox and G201 frame mounts	50 FT-LB, wet Bolt head or nut
ELECTRICAL SYSTEM	(2) MS21044B5 nut, securing A780 cable to B415-2 relay	80
	(1) NAS6605-3 bolt, securing B237-8 battery ground cable to G131-5 terminal assembly	70
EMPENNAGE	(8) NAS6604-6 bolts, securing vertical stabilizers to upper horizontal stabilizer	185
	(1) NAS1352-3-14P screw, securing guard assembly blocks to lower vertical stabilizer	40
	(2) AN814-10D plugs (upper weight only)	100
ENGINE CONTROLS	(1) Fuel control unit (FCU) lever nut	40-50
	(1) Power turbine governor (PTG) lever nut	40-60
	(4) MS21042L3 nut, securing control wires	25-30
ENGINE INDUCTION	(1) A457-16 fitting, IBF filter FMA line	20
	(1) A457-17 fitting, IBF filter FMA line	60
	(1) A457-18 fitting, IBF filter FMA line	3
	(1) G738-1 nozzle, compressor service	30
	(1) AN316-7R nut, compressor service line	150
	(1) AN929-4 cap, compressor service line	60
FUEL SYSTEM	(1) A761-2 valve, sump (B270-6 sealant on threads)	60
	(1) B254-3 strainer, fuel bladder outlet	150
	(1) B283-12 hose assembly, fuel valve to fuel pump inlet, B-nuts	110-130
	(5) B289 bolts, fuel sender	37
	(1) F550 fuel sender center stud nut	11
	(1) B330-6 palnut at fuel sender center stud	9

20-33 Special Torques (continued)

AREA	FASTENER	TORQUE (IN.-LB)
FUEL SYSTEM (Cont'd)	(1) F550 fuel sender ground stud nut	9
	(1) B330-5 palnut at fuel sender ground stud	9
	(1) D205-21 hose assembly, fuel bladder outlet to fuel valve, B-nuts	110-130
	(1) G254-8 (or G254-2) fitting, vent assembly	200
	(1) G254-6 retainer, vent assembly	200
	(1) A880-1005 or AN924-5D nut, low fuel warning switch assembly	150
	(1) D210-3 nut, securing control wire	27
AUXILIARY FUEL SYSTEM	(5) B289-4 bolts, fuel sender	37
	(1) D205-35 hose assembly, nuts (large tank; drain)	120
	(2) D205-36 hose assembly, nuts	120
	(1) D205-37 hose assembly, nuts (small tank; drain)	120
	(1) A761-2 valve (B270-6 sealant on threads)	60
	(2) G764-5 fittings	200
	(1) G768-11 sensor assembly	Finger tighten only
	(1) G768-3 sensor assembly	85
	(1) F550 fuel sender center stud nut	11
	(1) B330-6 palnut at fuel sender center stud	9
	(1) F550 fuel sender ground stud nut	9
	(1) B330-5 palnut at fuel sender ground stud	9
	(2) AN806-6D plugs (when tank assembly removed)	120
	(4) 90825A146 screw	10
	(2) A880-906 or AN815-6D fitting	200
PRESSURE FUELING SYSTEM	(1) A880-1005 nut, A521-6 low fuel switch assy (single)	150
	(1) A880-1005 nut, A521-7 low fuel switch assy (dual)	150
	(1) D205-44 hose assembly, nuts	500
	(1) D205-45 hose assembly, nuts	500
	(2) D745-7 switch assembly, fuel pressure	120
	(1) G989-6 fitting, at G239-1 panel	500
	(1) G990-4 (proximity) sensor assembly, hex nut	60
	(2) G992-1 valve assemblies, shut-off	500
	(4 per valve) G992-1 valve assembly, hex head screws	60
	(2) 10228 fittings (B270-6 or A701-11 pipe threads only)	650
	(1) 10375 adapter (B270-6 or A701-11)	500
FUEL FLOW METER INSTALLATION	(1) 564601 tube assembly, at AS4824N08 seal	325
	(1) 564601 tube assembly, at AS4824N04 seal	145
	(1) SS6565-8-4 fitting, at AS4824N08 seal	325
	(1) SS6565-8-4 fitting, at AS4824N04 seal	145
	(1) AS5178J04 nut, at G155-1 (aft) bracket	145

20-33 Special Torques (continued)

AREA	FASTENER	TORQUE (IN.-LB)
FUSELAGE	(1) D210-5 nut, ground handling ball	240
	(4) NAS6604-3 bolts, securing F050-2 stabilizer to tailcone	185
	(4) NAS6603-2 bolts, securing F050-2 stabilizer to F955-1 bracket	70
HEATER	(1) G391-1 line assembly B-nuts (apply A257-9 to upper nut threads)	245 wet
	(1) G391-2 line assembly B-nuts	100
	(1) G391-3 line assembly B-nuts	100
	(1) G391-4 line assembly B-nuts	100
	(1) G391-5 line assembly B-nuts	230-260
	(2) G392-3 diffuser assembly B-nuts	100
	(1) D210-3 nut, securing control wire	25–30
HYDRAULIC HOSES & FITTINGS	(2) AN815-3D union	95–105
	(2) AN815-4D union	135–150
	(1) AN820-4 cap, on reservoir AN804D4 T-fitting	60
	(1) AN820-6 cap, on reservoir AN834-6D T-fitting	120
	(2) D452-3 nuts, on aft and left hand servos	60
	(3) D452-4 nuts, on aft and left hand servos and on reservoir	90
	(1) D452-6 nut, on reservoir	150
	(2) B330-19 palnut, on aft and left hand servos	30
	(3) B330-21 palnut, on aft and left servos and on reservoir	45
	(1) B330-25 palnut, on reservoir	75
	(1) D205-14 line assembly B-nuts	95–105
	(1) D205-17 line assembly B-nuts	95–105
	(1) D205-18 line assembly B-nuts	135–150
	(1) D205-22 line assembly B-nuts	95–105
	(1) D205-23 line assembly B-nuts	135–150
	(1) D205-24 line assembly B-nuts	135–150
	(2) F902-1 line assembly B-nuts	135–150
	(2) F902-2 line assembly B-nuts	110–130
HYDRAULIC RESERVOIR	(1) D487-3, filler-vent	100
	(1) D516-1, filter cap	150
	(1) B563-2, sight gage	150
	(1) D507-2 solenoid	100
HYDRAULIC SERVOS	(1) D210-08 nut, attaching D200-2 scissors	25
	(1) B330-6 palnut on D200-2 scissor apex fastener	5-10
LANDING GEAR	(4) NAS6604-46 bolts, securing ground handling wheel support weldments to skid tubes	70
	(4) NAS6607P20 bolt, securing landing gear to fuselage supports and shackles	66 FT-LB
	(2) NAS6607P44 bolt, securing shackles to fuselage	66 FT-LB
	(4) B277-28 clamp, securing fairings to struts	15

20-33 Special Torques (continued)

AREA	FASTENER	TORQUE (IN.-LB)
POP-OUT FLOATS (OPTIONAL EQUIPMENT)	(2) D674-2 hose assembly, B-nuts	245
	(4) D674-6 hose assembly, B-nuts	245
	(2) D674-7 hose assembly, B-nuts	120
	(1) D674-9 hose assembly, B-nuts	245
	(2) D674-10 hose assembly, B-nuts	245
	(2) D674-11 hose assembly, B-nuts	245
	(1) D674-12 hose assembly, B-nuts	245
	(1) D674-13 hose assembly, B-nuts	245
	(2) D770-1 valve assembly	40
	(2) D770-2 valve assembly	40
	(2) D770-3 valve assembly	40
	(2) D770-4 valve assembly	40
	(2) D770-5 valve assembly	40
	(2) D770-6 valve assembly	40
	(1) D757-1 valve assembly	40 FT-LB
MAIN ROTOR BLADE	(2) B289-2 bolts, per blade, self-sealing	70
	(2) A722-4 screws, per blade, tip balance weight	40 wet
	(2) NAS1351N3-12P screws, per blade, tip cover	40 wet
MAIN ROTOR FLIGHT CONTROLS	(2) MS35206-324 screws, low rotor RPM horn V3-1 switch	4-5
MAIN ROTOR GEARBOX	(1) B254-3 strainer, main rotor gearbox sump	200
	(1) B563-2 sight gage	150
	(1) B566-1 chip detector, main rotor gearbox	150
	(1) D205-25 hose assembly, sump to pump B-nuts	120
	(8) D210-3 nuts, securing D500-2 (hydraulic) and D500-3 (main gearbox oil) pumps to main gearbox	37
	(1) F904-1 pinion plug, securing tail rotor output yoke to main gearbox	60 FT-LB, wet
	(1) A880-1208 or AN814-8D plug, main rotor gearbox filler plug	150
	(1) MS21245L8 nut, securing input yoke to main gearbox	40 FT-LB
	(2) nuts securing 103SR13A-3 sender	50
	(1) chip detector wire terminal nut	5
MAIN ROTOR HUB	(1) NAS634-105 bolt, teeter hinge and (2) NAS634-105 bolt, coning hinges **WARNING** **Scrap bolt & nut if bolt is elongated more than 0.024 inch during tightening.**	New bolt: 0.021-0.022 inch elongation, wet Used bolt: 0.020-0.022 inch elongation, wet, and cotter pin holes must align

20-33 Special Torques (continued)

AREA	FASTENER	TORQUE (IN.-LB)
MAST TUBE	(1) B277-064 clamp, lower rib to mast tube	50
PITCH LINKS	(2) 21FKF-813 or 27FKF-813 self-locking jam nuts, main rotor pitch links	300
POWERPLANT	(1) D745-3 (pressure) switch assembly	65
	(1) D38999/26FB98SA plug, N1 speed sensor connector	150
	(1) F170 fitting, engine gearbox vent	100
	(1) F727-1 line assembly, fuel pump drain	50-65
	(1) F727-2 line assembly, horizontal turbine-firewall shield assembly drain	50-65
	(1) F741-1 line assembly, fuel differential pressure switch	80
	(1) G426-1 (fuel differential pressure) switch assembly	100
	(2) nuts, securing harness wire to MGT thermocouple studs, engine-supplied	20
	(2) nuts, securing harness wires to starter-generator small terminals, starter-generator supplied	20
	(2) nuts, securing harness wires to starter-generator large terminals, starter-generator supplied	180
	(1) nut, securing harness wire to ignition exciter box, engine-supplied	15
	(2) nuts, securing harness and (2) MS21919WCH4 clamps to engine accesory gearbox, engine-supplied	40
	(2) nuts, securing F577-1 bracket assembly, engine-supplied	40
	(2) nuts, securing F577-3 bracket, engine-supplied	40
	(2) tee bolts, securing F173-1 struts to engine, engine-supplied	35-40
	(2) A880-908 or AN815-8D unions, engine oil outlet & oil tank vent	250
	(1) A880-910 or AN815-10D union, engine oil inlet	375
	(1) AN919-0D reducer and (1) AN919-2D reducer	100
	(2) NAS6605-3 bolt, securing G200-1 lug to engine (optional)	110
	(6) NAS6605H3 bolts, securing (2) F593-1 support assemblies to engine	110
	(2) NAS6605H4 bolts and (1) NAS6605H2 bolt, securing F174-1 weldment and F593-3 plate to engine	110
	(1) CV26-77 check valve, engine oil outlet (superseded; early R66s)	250
	(1) G732-4 bolt (clutch retaining)	130
SWASHPLATE	(26) NAS1352N08-8 screws, securing spacers, sleeve assembly, shield, and retainers	35 wet
	(2) NAS1352N08-4 screws, securing B769-2 bracket	35
TAIL ROTOR	(1) D210-4 nut, securing C119-2 bumper	120
	(1) NAS6606-53 bolt, teeter hinge	420
TAIL ROTOR FLIGHT CONTROLS	(1) D210-4 nut, outboard of F316-1 bellcrank assembly	90

20-33 Special Torques (continued)

AREA	FASTENER	TORQUE (IN.-LB)
TAIL ROTOR GEARBOX	(1) A610-1 vent assembly	100
	(1) B563-4 sight gage	150
	(1) B566-2 chip detector	100
	(1) Nut, securing C049-4 harness assembly to chip detector	5
	(1) D210-5 nut, pitch control housing	240
	(1) AN320-8 nut, input yoke	35-45 FT-LB
	(4) MS20074-04-06 bolts, input cap	60
	(8) MS20074-04-06 bolts, input housing and output cap	100
	(4) NAS1352-5-12P bolts (undrilled), gearbox-to-tailcone attachment	260
TAIL ROTOR GUARD	(1) NAS1352-3-14P screw, securing block assembly to stabilizer	40
WINDSHIELD	(23) AN526C832R12 screw, thru center brace	16
	(74) B526-6 screw, polycarbonate windshield fasteners	24
	(4) B526-8 screw, polycarbonate windshield fasteners	24
	(24) NAS1352-08-12P screw, polycarbonate windshield fasteners, with wire strike provisions	30

Intentionally Blank

20-34 Push-Pull Tube Rod End Adjustment

> NOTE
>
> Refer to § 18-13 to adjust C258 main rotor pitch links.

The following procedure is standard for adjusting push-pull tube rod ends:

1. Loosen palnut and jam nut on rod end shank.
2. Remove hardware securing push-pull tube rod end to attachment point per respective instructions.
3. Screw rod end in or out of push-pull tube as required to obtain proper rigging adjustment. Apply B270-21 (corrosion) protectant to exposed threads.
4. After any rod end adjustment, verify rod end threaded shank blocks passage of 0.020-inch diameter wire thru the witness hole in the push-pull tube per Figure 5-1. When no witness hole is provided, refer to Figure 5-1 for maximum rod end extension.
5. Install fastener securing push-pull tube to attachment point per respective instructions.
6. Refer to Figure 5-2. Position rod ends to allow as much push-pull tube rotation as possible without binding. Standard torque jam nuts & palnuts per § 20-32 & torque stripe per Figure 5-1.

20-35 D210-series Nuts on Critical Fasteners

When performing maintenance that involves disassembly of a critical fastener (joints with a secondary lock), reassemble the fastener using a D210-series nut.

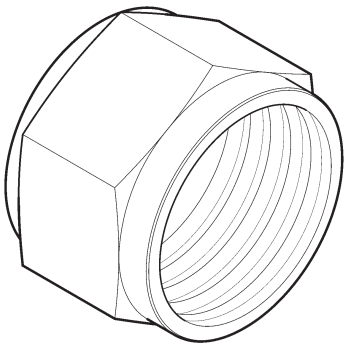
If a fastener is disassembled that has an MS21042L-series or NAS1291-series nut with a B330-series palnut or B332-series lockwasher (secondary lock),

replace MS21042L08 nut or NAS1291-08 nut with D210-08 nut,
replace MS21042L3 nut or NAS1291-3 nut with D210-3 nut,
replace MS21042L4 nut or NAS1291-4 nut with D210-4 nut,
replace MS21042L5 nut or NAS1291-5 nut with D210-5 nut,
replace MS21042L6 nut or NAS1291-6 nut with D210-6 nut,
replace NAS1291-7 nut with D210-7 nut,
replace NAS1291-8 nut with D210-8 nut, or
replace NAS1291-10 nut with D210-10 nut.

20-36 A880 Flared Tube Components

A. Nuts – Flare

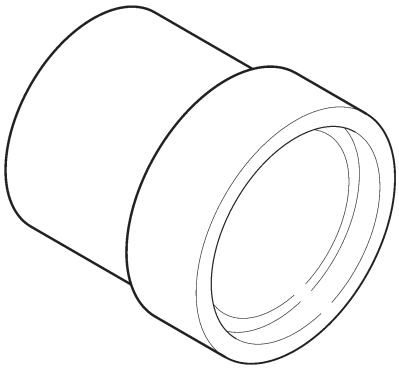
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-102	AN818-2D, AN818-2W, AS5175W02	AL	1/8-inch
-103	AN818-3D, AN818-3W, AS5175W03	AL	3/16-inch
-104	AN818-4D, AN818-4W, AS5175W04	AL	1/4-inch
-105	AN818-5D, AN818-5W, AS5175W05	AL	5/16-inch
-106	AN818-6D, AN818-6W, AS5175W06	AL	3/8-inch
-108	AN818-8D, AN818-8W, AS5175W08	AL	1/2-inch
-110	AN818-10D, AN818-10W, AS5175W10	AL	5/8-inch
-202	AN818-2J, AS5175J02	CRES	1/8-inch
-203	AN818-3J, AS5175J03	CRES	3/16-inch
-204	AN818-4J, AS5175J04	CRES	1/4-inch
-205	AN818-5J, AS5175J05	CRES	5/16-inch
-206	AN818-6J, AS5175J06	CRES	3/8-inch
-208	AN818-8J, AS5175J08	CRES	1/2-inch
-210	AN818-10J, AS5175J10	CRES	5/8-inch



20-36 A880 Flared Tube Components (continued)

B. Sleeves

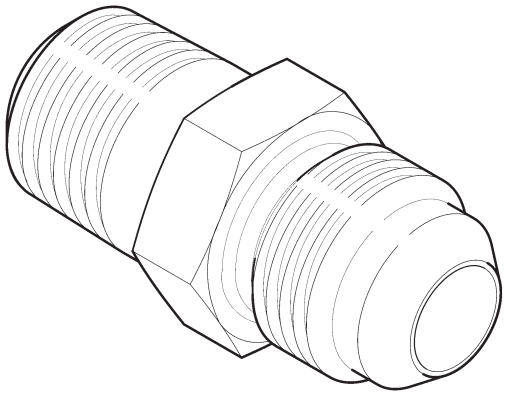
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-302	MS20819-2D, AS3220D02, AS3220W02	AL	1/8-inch
-303	MS20819-3D, AS3220D03, AS3220W03	AL	3/16-inch
-304	MS20819-4D, AS3220D04, AS3220W04	AL	1/4-inch
-305	MS20819-5D, AS3220D05, AS3220W05	AL	5/16-inch
-306	MS20819-6D, AS3220D06, AS3220W06	AL	3/8-inch
-308	MS20819-8D, AS3220D08, AS3220W08	AL	1/2-inch
-310	MS20819-10D, AS3220D10, AS3220W10	AL	5/8-inch
-402	MS20819-2J, AS5176J02	CRES	1/8-inch
-403	MS20819-3J, AS5176J03	CRES	3/16-inch
-404	MS20819-4J, AS5176J04	CRES	1/4-inch
-405	MS20819-5J, AS5176J05	CRES	5/16-inch
-406	MS20819-6J, AS5176J06	CRES	3/8-inch
-408	MS20819-8J, AS5176J08	CRES	1/2-inch
-410	MS20819-10J, AS5176J10	CRES	5/8-inch



20-36 A880 Flared Tube Components (continued)

C. Adapters – NPT to Flare

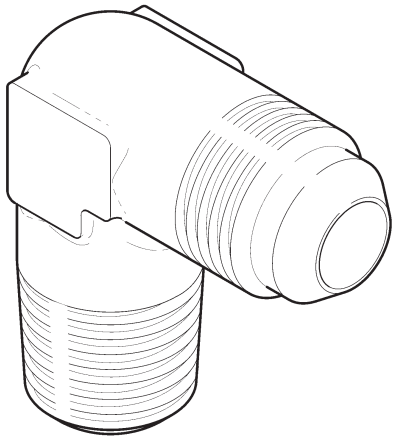
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-502	AN816-2D, AS5194D0202	AL	1/8-inch
-503	AN816-3D, AS5194D0302	AL	3/16-inch
-504	AN816-4D, AS5194D0402	AL	1/4-inch
-505	AN816-5D, AS5194D0502	AL	5/16-inch
-506	AN816-6D, AS5194D0604	AL	3/8-inch
-508	AN816-8D, AS5194D0806	AL	1/2-inch
-510	AN816-10D, AS5194D1008	AL	5/8-inch
-532	AN816-2J, AS5194J0202	CRES	1/8-inch
-533	AN816-3J, AS5194J0302	CRES	3/16-inch
-534	AN816-4J, AS5194J0402	CRES	1/4-inch
-535	AN816-5J, AS5194J0502	CRES	5/16-inch
-536	AN816-6J, AS5194J0604	CRES	3/8-inch
-538	AN816-8J, AS5194J0806	CRES	1/2-inch
-540	AN816-10J, AS5194J1008	CRES	5/8-inch
-562	AN816-2, AS5194-0202	STL	1/8-inch
-563	AN816-3, AS5194-0302	STL	3/16-inch
-564	AN816-4, AS5194-0402	STL	1/4-inch
-565	AN816-5, AS5194-0502	STL	5/16-inch
-566	AN816-6, AS5194-0604	STL	3/8-inch
-568	AN816-8, AS5194-0806	STL	1/2-inch
-570	AN816-10, AS5194-1008	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

D. Elbows – 90°, NPT to Flare

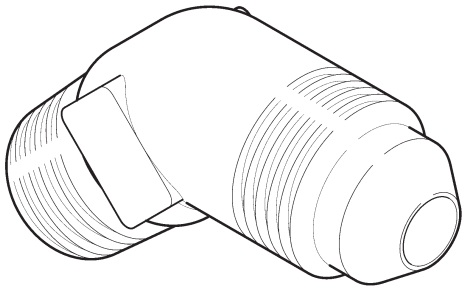
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-602	AN822-2D, MS20822-2D, AS5195W0202	AL	1/8-inch
-603	AN822-3D, MS20822-3D, AS5195W0302	AL	3/16-inch
-604	AN822-4D, MS20822-4D, AS5195W0402	AL	1/4-inch
-605	AN822-5D, MS20822-5D, AS5195W0502	AL	5/16-inch
-606	AN822-6D, MS20822-6D, AS5195W0604	AL	3/8-inch
-608	AN822-8D, MS20822-8D, AS5195W0806	AL	1/2-inch
-610	AN822-10D, MS20822-10D, AS5195W1008	AL	5/8-inch
-632	AN822-2J, MS20822-2J, AS5195J0202	CRES	1/8-inch
-633	AN822-3J, MS20822-3J, AS5195J0302	CRES	3/16-inch
-634	AN822-4J, MS20822-4J, AS5195J0402	CRES	1/4-inch
-635	AN822-5J, MS20822-5J, AS5195J0502	CRES	5/16-inch
-636	AN822-6J, MS20822-6J, AS5195J0604	CRES	3/8-inch
-638	AN822-8J, MS20822-8J, AS5195J0806	CRES	1/2-inch
-640	AN822-10J, MS20822-10J, AS5195J1008	CRES	5/8-inch
-662	AN822-2, MS20822-2, AS5195-0202	STL	1/8-inch
-663	AN822-3, MS20822-3, AS5195-0302	STL	3/16-inch
-664	AN822-4, MS20822-4, AS5195-0402	STL	1/4-inch
-665	AN822-5, MS20822-5, AS5195-0502	STL	5/16-inch
-666	AN822-6, MS20822-6, AS5195-0604	STL	3/8-inch
-668	AN822-8, MS20822-8, AS5195-0806	STL	1/2-inch
-670	AN822-10, MS20822-10, AS5195-1008	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

E. Elbows – 45°, NPT to Flare

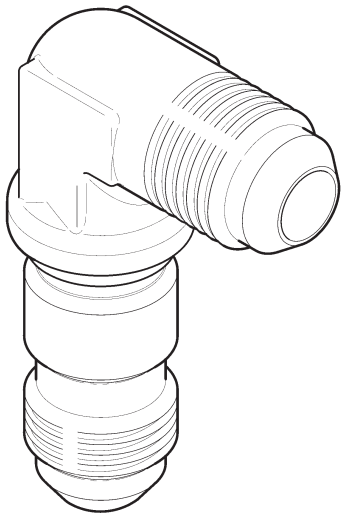
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-702	AN823-2D, MS20823-2D, AS5196W0202	AL	1/8-inch
-703	AN823-3D, MS20823-3D, AS5196W0302	AL	3/16-inch
-704	AN823-4D, MS20823-4D, AS5196W0402	AL	1/4-inch
-705	AN823-5D, MS20823-5D, AS5196W0502	AL	5/16-inch
-706	AN823-6D, MS20823-6D, AS5196W0604	AL	3/8-inch
-708	AN823-8D, MS20823-8D, AS5196W0806	AL	1/2-inch
-710	AN823-10D, MS20823-10D, AS5196W1008	AL	5/8-inch
-732	AN823-2J, MS20823-2J, AS5196J0202	CRES	1/8-inch
-733	AN823-3J, MS20823-3J, AS5196J0302	CRES	3/16-inch
-734	AN823-4J, MS20823-4J, AS5196J0402	CRES	1/4-inch
-735	AN823-5J, MS20823-5J, AS5196J0502	CRES	5/16-inch
-736	AN823-6J, MS20823-6J, AS5196J0604	CRES	3/8-inch
-738	AN823-8J, MS20823-8J, AS5196J0806	CRES	1/2-inch
-740	AN823-10J, MS20823-10J, AS5196J1008	CRES	5/8-inch
-762	AN823-2, MS20823-2, AS5196-0202	STL	1/8-inch
-763	AN823-3, MS20823-3, AS5196-0302	STL	3/16-inch
-764	AN823-4, MS20823-4, AS5196-0402	STL	1/4-inch
-765	AN823-5, MS20823-5, AS5196-0502	STL	5/16-inch
-766	AN823-6, MS20823-6, AS5196-0604	STL	3/8-inch
-768	AN823-8, MS20823-8, AS5196-0806	STL	1/2-inch
-770	AN823-10, MS20823-10, AS5196-1008	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

F. Elbows – 90°, Bulkhead Flare to Flare

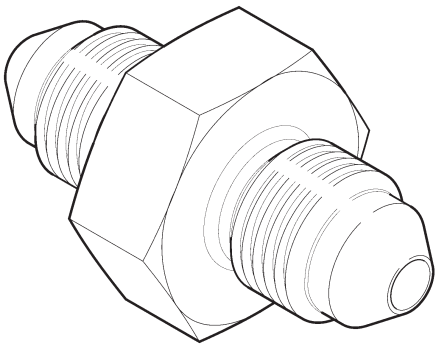
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-802	AN833-2D, AS1038D0202, AS1038W0202	AL	1/8-inch
-803	AN833-3D, AS1038D0303, AS1038W0303	AL	3/16-inch
-804	AN833-4D, AS1038D0404, AS1038W0404	AL	1/4-inch
-805	AN833-5D, AS1038D0505, AS1038W0505	AL	5/16-inch
-806	AN833-6D, AS1038D0606, AS1038W0606	AL	3/8-inch
-808	AN833-8D, AS1038D0808, AS1038W0808	AL	1/2-inch
-810	AN833-10D, AS1038D1010, AS1038W1010	AL	5/8-inch
-832	AN833-2J, AS1038J0202	CRES	1/8-inch
-833	AN833-3J, AS1038J0303	CRES	3/16-inch
-834	AN833-4J, AS1038J0404	CRES	1/4-inch
-835	AN833-5J, AS1038J0505	CRES	5/16-inch
-836	AN833-6J, AS1038J0606	CRES	3/8-inch
-838	AN833-8J, AS1038J0808	CRES	1/2-inch
-840	AN833-10J, AS1038J1010	CRES	5/8-inch
-862	AN833-2, AS1038-0202	STL	1/8-inch
-863	AN833-3, AS1038-0303	STL	3/16-inch
-864	AN833-4, AS1038-0404	STL	1/4-inch
-865	AN833-5, AS1038-0505	STL	5/16-inch
-866	AN833-6, AS1038-0606	STL	3/8-inch
-868	AN833-8, AS1038-0808	STL	1/2-inch
-870	AN833-10, AS1038-1010	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

G. Unions – Flare to Flare

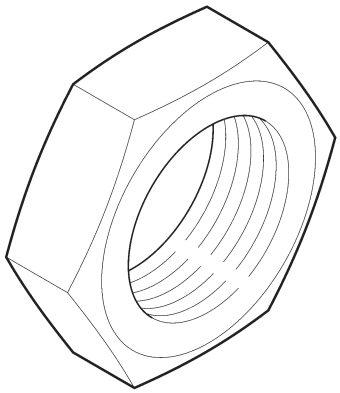
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-902	AN815-2D, AS5174D0202, AS5174W0202	AL	1/8-inch
-903	AN815-3D, AS5174D0303, AS5174W0303	AL	3/16-inch
-904	AN815-4D, AS5174D0404, AS5174W0404	AL	1/4-inch
-905	AN815-5D, AS5174D0505, AS5174W0505	AL	5/16-inch
-906	AN815-6D, AS5174D0606, AS5174W0606	AL	3/8-inch
-908	AN815-8D, AS5174D0808, AS5174W0808	AL	1/2-inch
-910	AN815-10D, AS5174D1010, AS5174W1010	AL	5/8-inch
-932	AN815-2J, AS5174J0202	CRES	1/8-inch
-933	AN815-3J, AS5174J0303	CRES	3/16-inch
-934	AN815-4J, AS5174J0404	CRES	1/4-inch
-935	AN815-5J, AS5174J0505	CRES	5/16-inch
-936	AN815-6J, AS5174J0606	CRES	3/8-inch
-938	AN815-8J, AS5174J0808	CRES	1/2-inch
-940	AN815-10J, AS5174J1010	CRES	5/8-inch
-962	AN815-2, AS5174-0202	STL	1/8-inch
-963	AN815-3, AS5174-0303	STL	3/16-inch
-964	AN815-4, AS5174-0404	STL	1/4-inch
-965	AN815-5, AS5174-0505	STL	5/16-inch
-966	AN815-6, AS5174-0606	STL	3/8-inch
-968	AN815-8, AS5174-0808	STL	1/2-inch
-970	AN815-10, AS5174-1010	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

H. Nuts – Hex

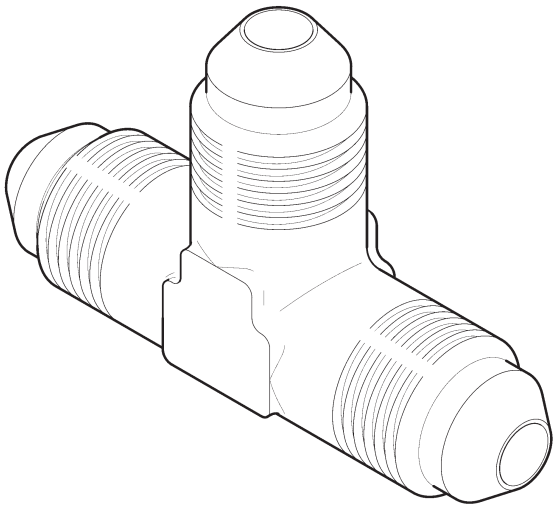
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-1002	AN924-2D, AN924-2W, AS5178W02	AL	1/8-inch
-1003	AN924-3D, AN924-3W, AS5178W03	AL	3/16-inch
-1004	AN924-4D, AN924-4W, AS5178W04	AL	1/4-inch
-1005	AN924-5D, AN924-5W, AS5178W05	AL	5/16-inch
-1006	AN924-6D, AN924-6W, AS5178W06	AL	3/8-inch
-1008	AN924-8D, AN924-8W, AS5178W08	AL	1/2-inch
-1010	AN924-10D, AN924-10W, AS5178W10	AL	5/8-inch
-1032	AN924-2J, AS5178J02	CRES	1/8-inch
-1033	AN924-3J, AS5178J03	CRES	3/16-inch
-1034	AN924-4J, AS5178J04	CRES	1/4-inch
-1035	AN924-5J, AS5178J05	CRES	5/16-inch
-1036	AN924-6J, AS5178J06	CRES	3/8-inch
-1038	AN924-8J, AS5178J08	CRES	1/2-inch
-1040	AN924-10J, AS5178J10	CRES	5/8-inch
-1062	AN924-2, AS5178-02	STL	1/8-inch
-1063	AN924-3, AS5178-03	STL	3/16-inch
-1064	AN924-4, AS5178-04	STL	1/4-inch
-1065	AN924-5, AS5178-05	STL	5/16-inch
-1066	AN924-6, AS5178-06	STL	3/8-inch
-1068	AN924-8, AS5178-08	STL	1/2-inch
-1070	AN924-10, AS5178-10	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

I. Tees – NPT to Flare

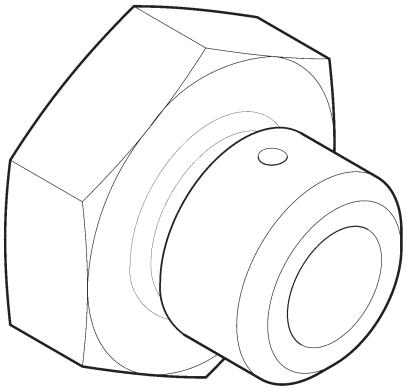
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-1102	AN826-2D, MS20826-2D, AS5198W020202	AL	1/8-inch
-1103	AN826-3D, MS20826-3D, AS5198W030203	AL	3/16-inch
-1104	AN826-4D, MS20826-4D, AS5198W040204	AL	1/4-inch
-1105	AN826-5D, MS20826-5D, AS5198W050205	AL	5/16-inch
-1106	AN826-6D, MS20826-6D, AS5198W060406	AL	3/8-inch
-1108	AN826-8D, MS20826-8D, AS5198W080608	AL	1/2-inch
-1110	AN826-10D, MS20826-10D, AS5198W100810	AL	5/8-inch
-1132	AN826-2J, MS20826-2J, AS5198J020202	CRES	1/8-inch
-1133	AN826-3J, MS20826-3J, AS5198J030203	CRES	3/16-inch
-1134	AN826-4J, MS20826-4J, AS5198J040204	CRES	1/4-inch
-1135	AN826-5J, MS20826-5J, AS5198J050205	CRES	5/16-inch
-1136	AN826-6J, MS20826-6J, AS5198J060406	CRES	3/8-inch
-1138	AN826-8J, MS20826-8J, AS5198J080608	CRES	1/2-inch
-1140	AN826-10J, MS20826-10J, AS5198J100810	CRES	5/8-inch
-1162	AN826-2, MS20826-2, AS5198-020202	STL	1/8-inch
-1163	AN826-3, MS20826-3, AS5198-030203	STL	3/16-inch
-1164	AN826-4, MS20826-4, AS5198-040204	STL	1/4-inch
-1165	AN826-5, MS20826-5, AS5198-050205	STL	5/16-inch
-1166	AN826-6, MS20826-6, AS5198-060406	STL	3/8-inch
-1168	AN826-8, MS20826-8, AS5198-080608	STL	1/2-inch
-1170	AN826-10, MS20826-10, AS5198-100810	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

J. Plugs without Holes

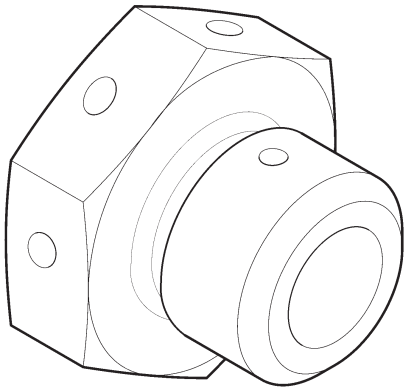
Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-1202	AN814-2D, AN814-2W, AS5169D02, AS5169W02	AL	1/8-inch
-1203	AN814-3D, AN814-3W, AS5169D03, AS5169W03	AL	3/16-inch
-1204	AN814-4D, AN814-4W, AS5169D04, AS5169W04	AL	1/4-inch
-1205	AN814-5D, AN814-5W, AS5169D05, AS5169W05	AL	5/16-inch
-1206	AN814-6D, AN814-6W, AS5169D06, AS5169W06	AL	3/8-inch
-1208	AN814-8D, AN814-8W, AS5169D08, AS5169W08	AL	1/2-inch
-1210	AN814-10D, AN814-10W, AS5169D10, AS5169W10	AL	5/8-inch
-1232	AN814-2J, AS5169J02	CRES	1/8-inch
-1233	AN814-3J, AS5169J03	CRES	3/16-inch
-1234	AN814-4J, AS5169J04	CRES	1/4-inch
-1235	AN814-5J, AS5169J05	CRES	5/16-inch
-1236	AN814-6J, AS5169J06	CRES	3/8-inch
-1238	AN814-8J, AS5169J08	CRES	1/2-inch
-1240	AN814-10J, AS5169J10	CRES	5/8-inch
-1262	AN814-2, AS5169-02	STL	1/8-inch
-1263	AN814-3, AS5169-03	STL	3/16-inch
-1264	AN814-4, AS5169-04	STL	1/4-inch
-1265	AN814-5, AS5169-05	STL	5/16-inch
-1266	AN814-6, AS5169-06	STL	3/8-inch
-1268	AN814-8, AS5169-08	STL	1/2-inch
-1270	AN814-10, AS5169-10	STL	5/8-inch



20-36 A880 Flared Tube Components (continued)

K. Plugs with Holes

Dash Numbers	Allowable Part Numbers	Material REF	Tube OD REF
-1302	AN814-2DL, AN814-2WL, AS5169D02L, AS5169W02L	AL	1/8-inch
-1303	AN814-3DL, AN814-3WL, AS5169D03L, AS5169W03L	AL	3/16-inch
-1304	AN814-4DL, AN814-4 WL, AS5169D04L, AS5169W04L	AL	1/4-inch
-1305	AN814-5DL, AN814-5WL, AS5169D05L, AS5169W05L	AL	5/16-inch
-1306	AN814-6DL, AN814-6WL, AS5169D06L, AS5169W06L	AL	3/8-inch
-1308	AN814-8DL, AN814-8WL, AS5169D08L, AS5169W08L	AL	1/2-inch
-1310	AN814-10DL, AN814-10WL, AS5169D10L, AS5169W10L	AL	5/8-inch
-1332	AN814-2JL, AS5169J02L	CRES	1/8-inch
-1333	AN814-3JL, AS5169J03L	CRES	3/16-inch
-1334	AN814-4JL, AS5169J04L	CRES	1/4-inch
-1335	AN814-5JL, AS5169J0SL	CRES	5/16-inch
-1336	AN814-6JL, AS5169J06L	CRES	3/8-inch
-1338	AN814-8JL, AS5169J0BL	CRES	1/2-inch
-1340	AN814-10JL, AS5169J10L	CRES	5/8-inch
-1362	AN814-2L, AS5169-02L	STL	1/8-inch
-1363	AN814-3L, AS5169-03L	STL	3/16-inch
-1364	AN814-4L, AS5169-04L	STL	1/4-inch
-1365	AN814-5L, AS5169-05L	STL	5/16-inch
-1366	AN814-6L, AS5169-06L	STL	3/8-inch
-1368	AN814-8L, AS5169-08L	STL	1/2-inch
-1370	AN814-10L, AS5169-10L	STL	5/8-inch



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20-40 Non-Destructive Testing

WARNING

Review appropriate Safety Data Sheet (SDS) when working in proximity to hazardous materials. Specific recommendations for use of personal protective equipment are located in the SDS.

20-41 Magnetic Particle Inspection

Ferromagnetic steel parts must be inspected for structural defects using magnetic particle inspection.

Steel parts covered by this specification shall be inspected per ASTM E 1444 wet process with ultra-violet light. Applicable requirements and limitations of the above standard shall apply. Parts shall be thoroughly demagnetized and cleaned after inspections. Record the size and location of all rejectable indications.

Procedures and equipment used to perform the inspection shall conform to requirements of ASTM E 1444. Whenever possible, parts shall be inspected with both circular and longitudinal magnetization.

A. Inspection Criteria

Parts (except gears) which are inspected by magnetic particle inspection shall be accepted or rejected according to the following criteria:

Acceptable indications:

- Indications smaller than 0.015 inch are not considered ratable.
- Indications caused by sharp changes in cross-section or part geometry.

Rejectable indications:

- Indications interpreted as cracks, seams, laps, shuts, or any flaws which are open to the surface.
- Indications oriented at an angle of more than 15 degrees from the longitudinal axis with length exceeding 0.125 inch.
- Circumferential indications on any shoulder or fillet (changes in diameter).
- Any indications which break over an edge, shoulder, fillet radius, keyway, spline, or an adjacent area of part more than 0.015 inch.
- Indications caused by undercuts at the toe of a weld.
- Indications caused by cracks in the weld or parent metal.
- Indications caused by inclusions in weld material exceeding 0.1 inch in length.

20-42 Fluorescent Penetrant Inspection

This specification provides for surface inspection of parts fabricated from nonmagnetic materials to detect discontinuities open to the surface, such as cracks, cold shuts, laps, porosity and other surface defects.

Applicable requirements and limitations of ASTM E1417 shall apply. After inspection is complete, solvent clean parts.

The step-by-step procedure and equipment used to perform the inspection shall be accomplished per ASTM E1417. The following types, methods, and sensitivity levels are recommended:

Type: 1–Fluorescent dye
Method: A–Water washable
Sensitivity: Level 2–Medium
Form: A–Dry powder

A. Inspection Criteria

Parts inspected by fluorescent penetrant method shall be accepted or rejected on basis of acceptance limits specified. If acceptance limits are not specified, rejectable surface defects and any of the following:

- Cracks
- Seams
- Cold shuts or laps
- Surface inclusions
- In castings, aligned discontinuous surface indications other than cracks, cold shuts and inclusions are rejectable if more than 3/8 inch in length.

20-50 Corrosion Control

20-51 Conversion Coat – Aluminum

Use the following procedures to prepare and apply conversion coat to aluminum alloys. Conversion coat improves corrosion resistance and adherence of paint and adhesives.

CAUTION

Do not allow Bonderite C-IC 33 Aero or M-CR 1201/1132 Aero to contact bonded joints.

A. Procedure

1. Unless otherwise specified, lightly scuff clean surface with 320-grit aluminum-oxide abrasive paper to remove corrosion or other contaminants.
2. Apply Bonderite C-IC 33 Aero to surface for 2–5 minutes. DO NOT allow Bonderite C-IC 33 Aero to dry; re-apply as required.
3. Rinse thoroughly with clean, potable water.

20-51 Conversion Coat – Aluminum (continued)

A. Procedure (continued)

4. Apply Bonderite M-CR 1201 Aero to surface for 2–5 minutes (should be light golden brown). DO NOT allow Bonderite M-CR 1201 Aero to dry; re-apply as required.

5. Rinse thoroughly with clean, potable water. Gently wipe with clean & dry cloth, blow dry, or allow to air dry.

B. Felt Tip Applicator

Apply Bonderite M-CR 1132 Aero per manufacturer's recommendations.

20-60 Priming and Painting

This specification outlines preparation and application requirements for primers and topcoat. Primers provide corrosion protection and a final finish or a base for topcoat. Use only approved materials listed in § 20-70.

Do not prime or paint with a topcoat finish the following areas (unless directed):

- Sliding friction joints.
- Stainless steel parts.
- Swivel joints and adjustable rod ends.
- Plastic, rubber, electrical components and wires or similar materials.
- Bolted joints where torque is a specific requirement for clamping action.
- Bearing press fit or close tolerance slip fit joints (except where wet primer is part of the assembly procedure).

WARNING

Review appropriate Safety Data Sheet (SDS) when working in proximity to hazardous materials. Specific recommendations for use of personal protective equipment are located in the SDS.

A. Priming

1. Preparing Aluminum

Unless otherwise specified, conversion coating per § 20-51 is standard treatment before priming aluminum. If bare aluminum is primed without conversion coating, the following procedure must be used:

a. Alkaline clean if immersion is practical, otherwise wipe clean with an approved degreasing agent. Do not allow alkaline cleaner to contact bonded joints.

b. Lightly scuff the surface with Scotch-Brite pads.

c. Wipe with a tack rag to remove any foreign material or damp wipe with an approved solvent.

d. Air dry. Do not touch parts with bare hands until primed.

20-60 Priming and Painting (continued)

A. Priming (continued)

2. Preparing Steel

Alkaline clean is the preferred method for cleaning stainless steel. Alternately, stainless steel may be cleaned using an approved solvent. Do not allow alkaline cleaner to contact bonded joints.

Steel parts should only be cleaned using an approved solvent; using an alkaline cleaning process on steel may cause a corrosive reaction.

Where immersion is not practical or for extremely greasy or dirty parts, a preclean in a solvent vapor degreaser may be used.

Air or blow dry using filtered, dry, compressed air.

3. Application

Apply primer after mixing per manufacturer's recommendations. Primer coating is not to exceed 0.0005–0.0020 inch thickness per coat. For parts with internal openings, such as tubes, prime the inside as follows:

a. Thin primer to watery consistency using required reducer.
b. Pour in primer, slosh around, then drain immediately.
c. Dry parts at least (6) hours before using.

4. Inspection

Inspect for complete coverage and excessive thickness. If primer is excessively thick, strip part and re-prime. Refer to § 20-70 for approved materials.

NOTE

Primed areas that have been sanded to bare metal must have conversion coating (if required) and primer re-applied prior to topcoat to restore anti-corrosion properties.

B. Painting

Prior to liquid topcoat application, ensure surfaces have been cleaned and primed. In general, most parts will be cleaned and primed as detail parts. However, in some cases, such as the gearbox assembly, this is not practical and primer and topcoat are applied on the assembled component.

Previously primed surfaces, or primed surfaces that have completely cured require the following preparation before paint:

1. Lightly sand using 220-grit or finer sandpaper.
2. Lightly scuff with Scotch Brite pads (optional).
3. Wipe with clean cloth and approved solvent.
4. Wipe with tack cloth.
5. Apply topcoat.

20-70 Approved Materials

The following items are available from the noted manufacturer(s) or their distributor(s). Check with appropriate regulatory authority(s) for allowable usage of materials.

WARNING

Review appropriate Safety Data Sheet (SDS) when working in proximity to hazardous materials. Specific recommendations for use of personal protective equipment are located in the SDS.

CAUTION

Follow product manufacturer's instructions for handling and storage.

20-71 Paint Strippers

PRODUCT	MANUFACTURER/SUPPLIER	APPLICATION
Cee-Bee Stripper A-292NC-M	McGean-Rohco: Cee-Bee Division Downey, CA	Metal parts, except blades and flex plates. Do not use near mechanically fastened or bonded joints.
Plastic Media Blasting System, AMMO 301 size 20/30, type II (or equivalent polymer media)	Pauli Systems Inc. Fairfield, CA	Metal parts except blades and unsupported sheet metal less than 0.040 inch thick. Pressure for steel frames: 40–55 PSI Pressure for aluminum parts: 30–40 PSI

20-72 Solvents and Cleaners

PRODUCT	MANUFACTURER/SUPPLIER	APPLICATION
QSOL 220	Safety-Kleen Systems, Inc. Plano, TX	General use for cleaning prior to applying primer, topcoat, adhesive, or sealant.
Benzene, 1-Chloro-4 (Trifluoromethyl) PCBTF***	Any	
Acetone***	Any	
220 Low VOC Cleaner	Axalta, Wilmington, DE	
Final Klean 3909S	Du Pont Chemical Los Angeles, CA	
XP Aerospace Prep Surface Cleaner	AkzoNobel, Waukegan, IL	
EM-Citro*	LPS Laboratories, Inc. Tucker, GA	Removing adhesive residue on cabin and polycarbonate & acrylic windshield.
Lacolene (Aliphatic Hydrocarbon)	Any	Windshield and plastic cleaning and general residue removal.
Plexus®	B.T.I. Chemical Co. Oak Park, CA	
Exhaust Cleaner	Pacific Products, Inc. Sutter Creek, CA	Removing exhaust residue. Do not use on TR blades, TR hub, or TR gearbox, or on bonded joints or bearings.

20-72 Solvents and Cleaners (continued)

PRODUCT	MANUFACTURER/SUPPLIER	APPLICATION
Presolve	LPS Laboratories, Inc. Tucker, GA	Hydraulic components only.
Tetrachloroethylene (Perchloroethylene)	Any	Vapor degreaser.
815 GD SF50	Brulin Corporation Indianapolis, IN L&R Mfg. Co. Kearny, NJ	Ultrasonic cleaning, general use.**
#112 Ammoniated or #222 Nonammoniated cleaning solution #194 rinse solution	L&R Mfg. Co. Kearny, NJ	Ultrasonic cleaning, avionics components only.
Cleanup Wipe E-4365	Sontara Candler, NC	Cleaning and drying.
Snoop Liquid Leak Detector	Swagelok Salon, OH	Leak detector.

* May be used on acrylic plastic.
** Mix 5%–20% by volume; titration not required.
*** Acetone and PCBTF may be mixed 50–50.

20-73 Fillers and Putty

PRODUCT	MANUFACTURER/SUPPLIER	APPLICATION
05960 Glazing Putty 05860 Dry Guide Coat 31180 Finishing Glaze	3M St. Paul, MN	
SBF1191	Gearhead Products Indianapolis, IN	Minor surface imperfections.
FE-351 Cream Hardener	Catalyst Systems Gnadenhutten, OH	

20-74 Torque Seal

PRODUCT	MANUFACTURER/SUPPLIER	APPLICATION
83314 thru 83321 Except 83316 (red)	Dykem Cross-Check ITW Pro Brands	Torque seal.

20-75 Primers

A. Non-chromate Primers

	Corlar 13580S*	Desoprime CA7502*	Desoprime CA7422*
Manufacturer	Axalta	PPG	PPG
Base	Corlar 13580S Epoxy Primer	CA7502A	CA7422A
Activator	Corlar 13180S Epoxy Activator	CA7502B	CA7422B
Reducer	13756S VOC-Exempt Reducer	CA7502C	CA7422C
Base: Activator: Reducer	4:1:1	4:4:1	4:4:1
Viscosity	17-21 sec in Zahn #2	15-19 sec in Zahn #2	15-19 sec in Zahn #2
Induction time	30 minutes	2 hours at 55–70°F 1 hour at 71–80°F 30 minutes > 70°F	2 hours at 55–68°F 1 hour at 69–95°F
Pot life	8 hours at 70°F	4 hours at 70°F	4 hours at 70°F
Flash off time	None	30 minutes	30 minutes
Dry time	2 hours at 70°F 1 hour at 130°F	3 hours at 70°F 30 minutes at 120°F	3 hours at 70°F 30 minutes at 120°F
Recoat window	48 hours	48 hours	48 hours

* Shelf life per manufacturer's recommendation.

B. Chromate Primers

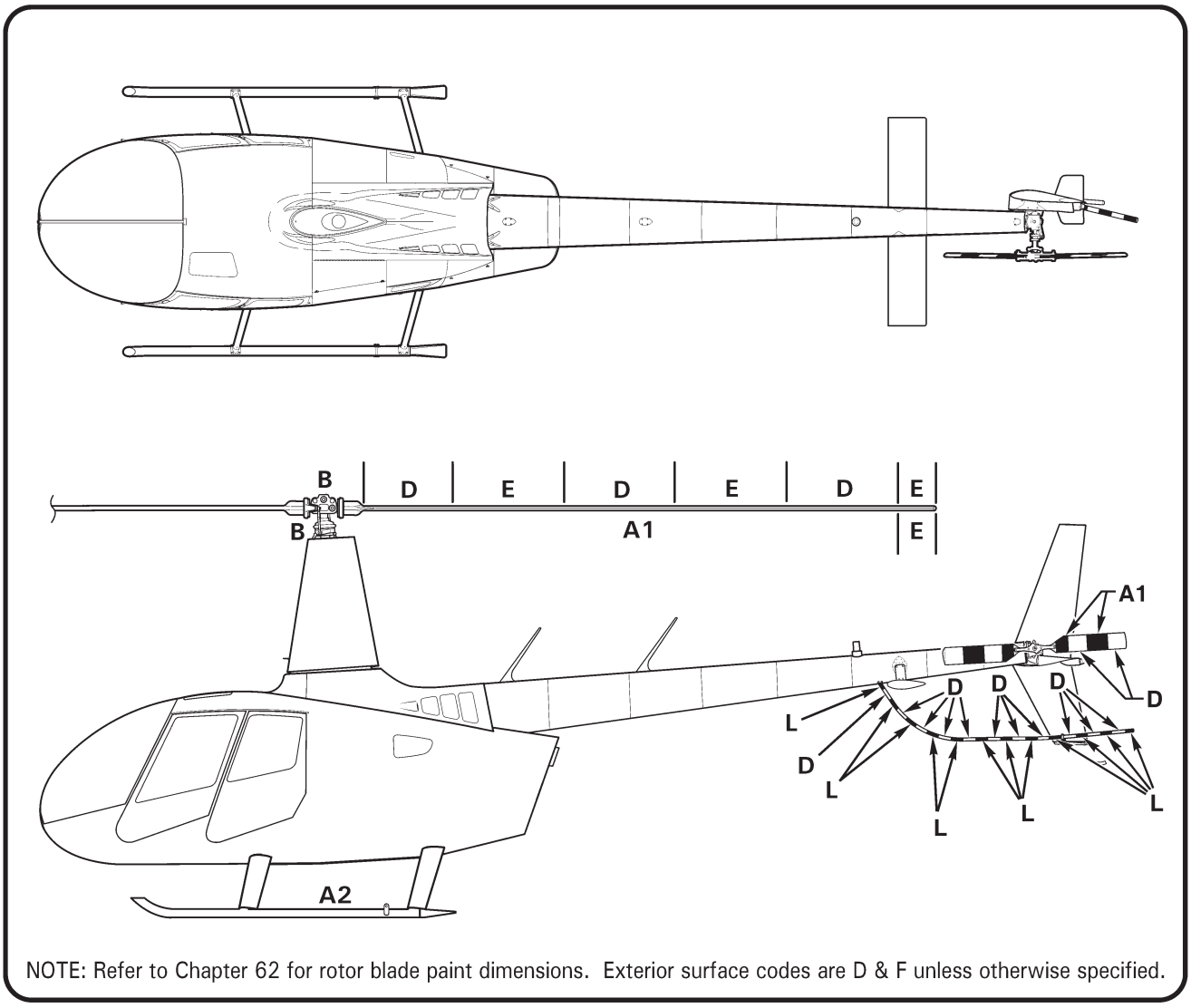
	44GN007*	10P20-44*
Manufacturer	PPG	AkzoNobel
Base	44GN007	10P20-44
Activator	44GN007CAT	EC-265 or EC-273
Reducer	Distilled or deionized water	TR-114 or TR-102
Base: Activator: Reducer	3:1:8	3:1:1
Viscosity	18–22 seconds in Zahn #2	13–19 seconds in Zahn #2
Induction time	None	None
Pot life	4 hours at 70°F	4 hours at 77°F
Flash off time	15 minutes	30 minutes
Dry time	2 hours at 70°F 45 minutes at 120°F	30 minutes at 140°F
Recoat window	24 hours	24 hours

* Shelf life per manufacturer's recommendation.

20-76 Powder Coat

PRODUCT	MANUFACTURER
Interpon 100-AL101QF Gray Zinc Rich Epoxy Powder*	AkzoNobel Santa Fe Springs, CA
81-2158 Vitralon Grey Zinc Rich Epoxy Powder*	Pratt & Lambert Chemical Coatings Buffalo, NY
39/80020 Smooth Matte Black Polyester Topcoat Powder*	Tiger Drylac USA Cucamonga, CA
49/72460 Smooth Glossy Gray RAL 7043 Polyester Topcoat Powder*	Tiger Drylac USA Cucamonga, CA
49/22460 Smooth Glossy Yellow RAL 1028 Polyester Topcoat Powder*	Tiger Drylac USA Cucamonga, CA
PFWF104S9 White Polyester Topcoat Powder*	Dupont Co. Wilmington, DE

* Shelf life is 12 months from date of manufacture at ambient temperature.



NOTE: Refer to Chapter 62 for rotor blade paint dimensions. Exterior surface codes are D & F unless otherwise specified.

FIGURE 20-3 PAINT CODES

20-77 Paints

Refer to Figures 20-3 & 20-4 for paint code application. Paint codes for specific helicopter serial numbers are listed on the inside cover of Airframe Maintenance Record (logbook).

FINISH CODE	MATERIAL*	ADDITIVES	MANUFACTURER	RHC PART NO.	APPLICATION
A1	Flat Black 18BK006	18BK006CAT Catalyst	PPG Aerospace; Irvine, CA	18BK006	Blade black
	Abrasion Resistant 23T3-90 Black	PC-216 Curing Solution	AkzoNobel; Waukegan, IL	23T3-90	
A2	FR2-55 Mat Topcoat	Thinner: water	Mapaero; Pamiers, France	557Z7038B005K	Interior, skid tube, windshield and window trim black
	Aerofine 8250 Topcoat	Thinner: water	AkzoNobel; Waukegan, IL	A8250/F9007	

20-77 Paints (continued)

FINISH CODE	MATERIAL*	ADDITIVES	MANUFACTURER	RHC PART NO.	APPLICATION
A3	Cardinal A-2000 Flat Black		Cardinal; Cleveland, OH	A-2000-BKE30903	Interior, skid tube, windshield and window trim touch up (Aerosol)
	Krylon 1613 Semi-Flat Black		Krylon; Colombus, OH	1613	
B	Dark Gray Imron AF400/AF700	13100S Activator 13110S Activator	Axalta; Wilmington, DE	DS020EP	Dark grey
D	White Imron AF400/AF700	13100S Activator 13110S Activator	Axalta; Wilmington, DE	N0774EP	White
E	Yellow Imron AF400/AF700	13100S Activator 13110S Activator	Axalta; Wilmington, DE	N0680EP	Yellow
F	Imron AF400/AF700 Colors	13100S Activator 13110S Activator	Axalta; Wilmington, DE	Refer to Airframe Maintenance Record	Exterior
G	Clear Imron AF740	13100S Activator 13110S Activator 13930S Reducer	Axalta; Wilmington, DE	AF740	Clear coat
	1311 Matte Clear Coat		Krylon; Columbus, OH	1311	Clear coat aerosol
J	White Imron 2.1 FT	9T00-A Activator D-121 Tint D-101 Tint 2100-P 2.1 Binder 9T20 Flattener	Axalta; Wilmington, DE	9T00-A D121 D101 2100P 9T20	Floats
K	Printcolor White Ink 750-9005 Printcolor Black Ink 750-8005 Printcolor Maize Yellow Ink 750-1205 Printcolor Carnation Red 750-3005	Printcolor Glass Hardener 700 Gensolve Thinner GS-017 Slow Retarder 10-03432	Deco; Orange, CA	7509005 7508005 7501205 7503005	Silkscreen
L	Red Imron AF400/AF700	13100S Activator 13110S Activator	Axalta; Wilmington, DE	N0759EP	Red
O	Light Gray Imron AF400/AF700	13100S Activator 13110S Activator	Axalta; Wilmington, DE	N0020	Baggage compartment
P	Silver Bullet AM Tracer Black 20-452AM-F1	16-CURE-F1 Activator	Burke; Ridgefield, WA	20-452AM-F1	R66 Middle seat
Q	ProtectaClear		Everbrite; Rancho Cordova, CA	Protecta	Optional on bare area of main rotor spar, refer to R66 SL-37

* Shelf life per manufacturer's recommendation.

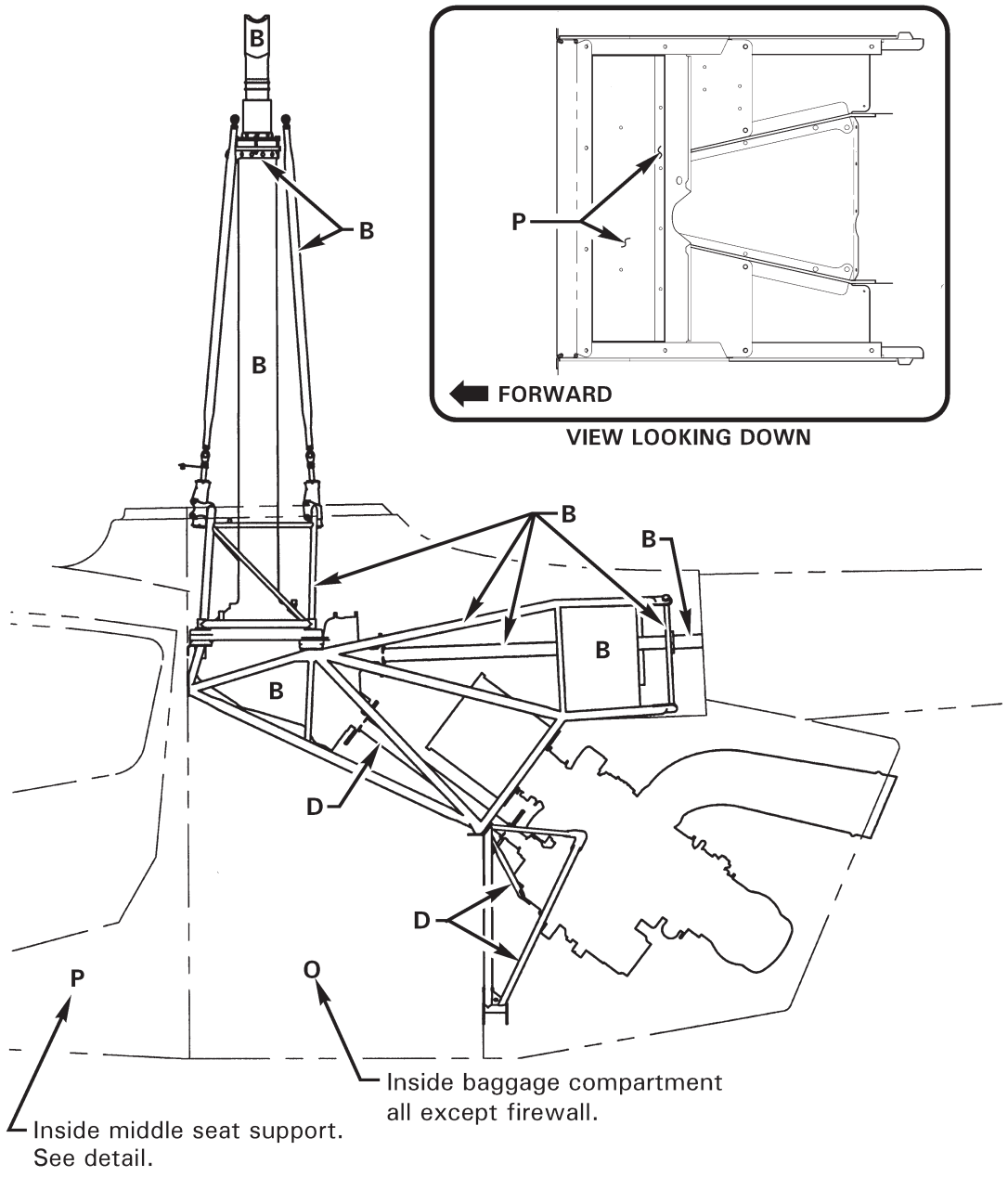


FIGURE 20-4 PAINT CODES

20-78 Lubricants

RHC PART NO.	LUBRICANT TYPE	MANUFACTURER'S PART NO.	MANUFACTURER
A257-1	Grease (general purpose)	101	Southwestern Petroleum Corp. Fort Worth, TX
A257-3	Grease	Aero Shell 14 MIL-G-25537	Shell Oil Co.
A257-4	Oil (automatic transmission fluid)	Dexron II or Dexron II/Mercon or Dexron III/Mercon	Any
A257-6	Grease (fuel resistant)	Fuelube EZ Turn	Fleet Supplies Inc. Cleveland, OH United-Erie Div. of Interstate Chemical Co. Erie, PA
A257-7	Dry film lubricant	Lubri-Kote Type A 1040 CR	Mealey Ind. Lubricants Cleveland, OH
A257-8	Rubber lubricant	P-80	International Products Corp. Trenton, NJ
A257-9	Anti-seize	Silver Grade	Loctite Corp. Newington, CT
A257-12	Grease	MobilGrease 28 MIL-PRF-81322	Exxon Mobil Corp.,
A257-15	Hydraulic fluid	Per MIL-PRF-5606	Any
A257-17	Substitute A257-19		
A257-18	O-ring lubricant	55	Dow Corning Corp. Midland, MI
A257-19	Valve lubricant and sealant compound	111	Dow Corning Corp. Midland, MI
A257-20	Pag oil	3420025-049 (Daphne Hermetic PR) or 3420025-067 (Nissan Type R)	Idemitsu Lubricants America Southfield, MI
A257-21	Petrolatum lubricant	P-16	Panef Corp. Milwaukee, WI
A257-22	Gear oil synthetic	Mobil SHC 629	Exxon Mobil Corp.
A257-23	Turbine oil	Per AS5780 Class HPC	Any

20-79 Adhesives and Sealants

RHC PART NO.	DESCRIPTION	COLOR	MFR. PART NO.	MANUFACTURER
B270-1	Sealant – manganese-cured, fuel resistant (2-part)	Gray	AC-730 B-*	3M Co. St. Paul, MN
B270-2	Substitute B270-1			
B270-4	Substitute B270-13			
B270-5	Sealant - synthetic rubber putty (1-part)	White Light Gray	Q4-2805 94-031	Dow Corning Corp. Midland, MI
B270-6	Sealant & lubricant - thread (1-part)	Gray	80631, 80632, 80633	Permatex, Inc. Solon, OH
			Titeseal 55	Radiator Spec. Co. Charlotte, NC
B270-7	Substitute B270-14			
B270-8	Adhesive - rubber, nitrile/acetone (1-part)	Tan	C 160	Stabond Corp. Gardena, CA
		Dark Brown	847	3M Co. St. Paul, MN
B270-9	Adhesive - epoxy, structural, flexible (2-part)	Gray	2216 B/A	3M Co. St. Paul, MN
B270-10	Adhesive/sealant - threadlocker, anaerobic, tight-fits (1-part)	Red	271	Henkel Loctite Corp. Rocky Hill, CT
B270-11	Adhesive/sealant - threadlocker, anaerobic, loose-fits (1-part)	Red	277	Henkel Loctite Corp. Rocky Hill, CT
B270-12	Sealant - electrical potting (2-part)	Any color except red	MIL-PRF-8516 Type II, Class 2, Category A or B	Any
B270-13	Sealant - silicone rubber, noncorrosive (1-part)	Translu-cent	3145	Dow Corning Corp. Midland, MI
B270-14	Substitute B270-8			
B270-15	Adhesive - plastic, for vinyl (1-part)	Clear	2262	3M Co. St. Paul, MN
B270-16	Substitute B270-14			
B270-17	Adhesive - cyanoacrylate, instant (1-part)	Clear	Super Bonder 495	Henkel Loctite Corp. Rocky Hill, CT
B270-18	Adhesive - weather strip (1-part)	Black	051135-08008	3M Co. St. Paul, MN
B270-19	Adhesive - epoxy structural, rigid (2-part)	Green	1838 B/A	3M Co. St. Paul, MN
B270-20	Adhesive/sealant - threadlocker, anaerobic, non-permanent (1-part)	Purple	222 or 222MS	Henkel Loctite Corp. Rocky Hill, CT

20-79 Adhesives and Sealants (continued)

RHC PART NO.	DESCRIPTION	COLOR	MFR. PART NO.	MANUFACTURER
B270-21	Protectant – corrosion, non-drying (1-part)	Amber	Max Wax	Corrosion Technologies Corp. Garland, TX
		Lt. Amber	LPS 3	LPS Laboratories, Inc. Tucker, GA
B270-22	Substitute B270-21			
	Protectant – corrosion, drying (1-part)	Amber	LPS Hardcoat	LPS Laboratories, Inc. Tucker, GA
B270-23	Sealant – gasket (1-part)	Purple	515	Henkel Loctite Corp. Rocky Hill, CT
B270-24	Activator/Primer – Anaerobic adhesive (1-part)	Translucent Green	7649	Henkel Loctite Corp. Rocky Hill, CT
B270-25	Clear Coat – automotive touch up, brush in bottle (1-part)	Clear	Clear Coat Touch up Bottle	Automotivetouchup Harahan, LA
B270-26	Sealant – Polysulfide, window glazing (2-Part)	Black	AC-251B-1	3M Co. St. Paul, MN
B270-27	Adhesive – Epoxy, High Strength Structural, Flexible (2-part)	Translucent Red Blue	EA 9309NA EA 9309.2NA	Henkel Loctite Corp. Rocky Hill, CT
B270-28	Substitute B270-27			

* Dash number for minimum hours application life may be –½, –2, –6, or –12.

20-80 Storage Limits

1. B283 hoses have a shelf storage life of 5 years. Hose service life is “on condition”, with a maximum of 12 years.
2. Elastic cords have a shelf storage life of 5 years. Elastic cord service life is “on condition”, with a maximum of 12 years. Use invoice or FAA Form 8130 date as start date.
3. Store V-belts at less than 85º F (30º C), with relative humidity below 70%. Avoid solvent and oil vapors, atmospheric contaminants, sunlight, and ozone sources (electric motors, arc welding, ionizing air purifiers, etc.). Belt shelf life is 4 years if preceding recommendations are followed. Use invoice date or FAA Form 8130-3 date as start date.
4. Oils and greases have a 5 year shelf life when stored and kept sealed in their original container. Use invoice date or FAA Form 8130 date as start date unless the manufacturer has marked container with manufacture date (in which case use manufacture date as start date).
5. Rubber o-rings, seals, and gaskets have a (20) quarter, five (5) year shelf life from the indicated cure date. Flourocarbon (Viton) and silicon rubber products shall adhere to manufacturer’s expiration date(s). Service life is “on condition” with a maximum of 12 years.
6. Store uninstalled fuel bladder in original container (if available) at 70ºF to 80ºF and below 70% humidity. Coat bladder with clean, non-detergent engine mineral oil to prevent rubber from drying out and cracking. Store bladder in relaxed condition free from tension, compression, or other deformation such as creases or folds.

20-90 Miscellaneous Practices

20-91 Part Interchangeability

Refer to R66 Illustrated Parts Catalog for part interchangeability information.

20-92 Thermal Fitting Parts

General Procedures for using heat to fit parts during assembly or evaluating parts that may have been overheated in service:

Aluminum parts must not be heated above 200ºF for more than 5 minutes. Higher temperatures or longer times adversely affect strength and corrosion properties. Scrap any aluminum parts suspected of going above 325ºF regardless of time at temperature.

Steel parts (bare) – Maximum temperature 300ºF. Higher temperature can reduce the strength or cause temper brittleness in some alloys.

Steel parts (cadmium plated) – Maximum temperature 300ºF. Higher temperatures will melt the plating and adversely affect steel strength by a process called liquid metal embrittlement.

Bearings and carburized parts such as gears, clutch shafts, and clutch housings should not be heated above 300ºF. Higher temperatures will reduce the surface hardness and increase wear rates.

Always heat parts in an oven with temperature control set no greater than the maximum temperature allowed for the part.

Always attach a pyrometer and thermocouple to the smallest aluminum part in the oven. Never depend on the oven control to determine part temperature.

Cooling a part for thermal fitting at assembly is not recommended. Water vapor from the air will condense on the part and frequently introduce water into the assembly causing severe internal corrosion over time.

20-93 Replacement Component Identification (Data) Plates

In order to issue a replacement component identification plate for field installation, RHC must first receive the old identification plate in legible condition. If old identification plate is lost or destroyed, then RHC must have an original letter (photocopies or faxes are NOT acceptable) from customer's Civil Aviation Authority authorizing identification plate replacement AND stating component name, part number, and serial number for each requested identification plate. There is a charge for each plate issued.

Identification plates may be carefully removed using a sharp plastic scraper. If necessary, use a heat gun to soften plate adhesive. Retain in a dry, contaminate-free area until ready for reinstallation.

Damp wipe local area with acetone or equivalent solvent prior to reinstallation. Residual adhesive on identification plate is usually sufficient for good adhesion. If necessary, use B270-9 adhesive or equivalent to secure.

20-94 Crimp Inspection

Refer to Figure 20-5.

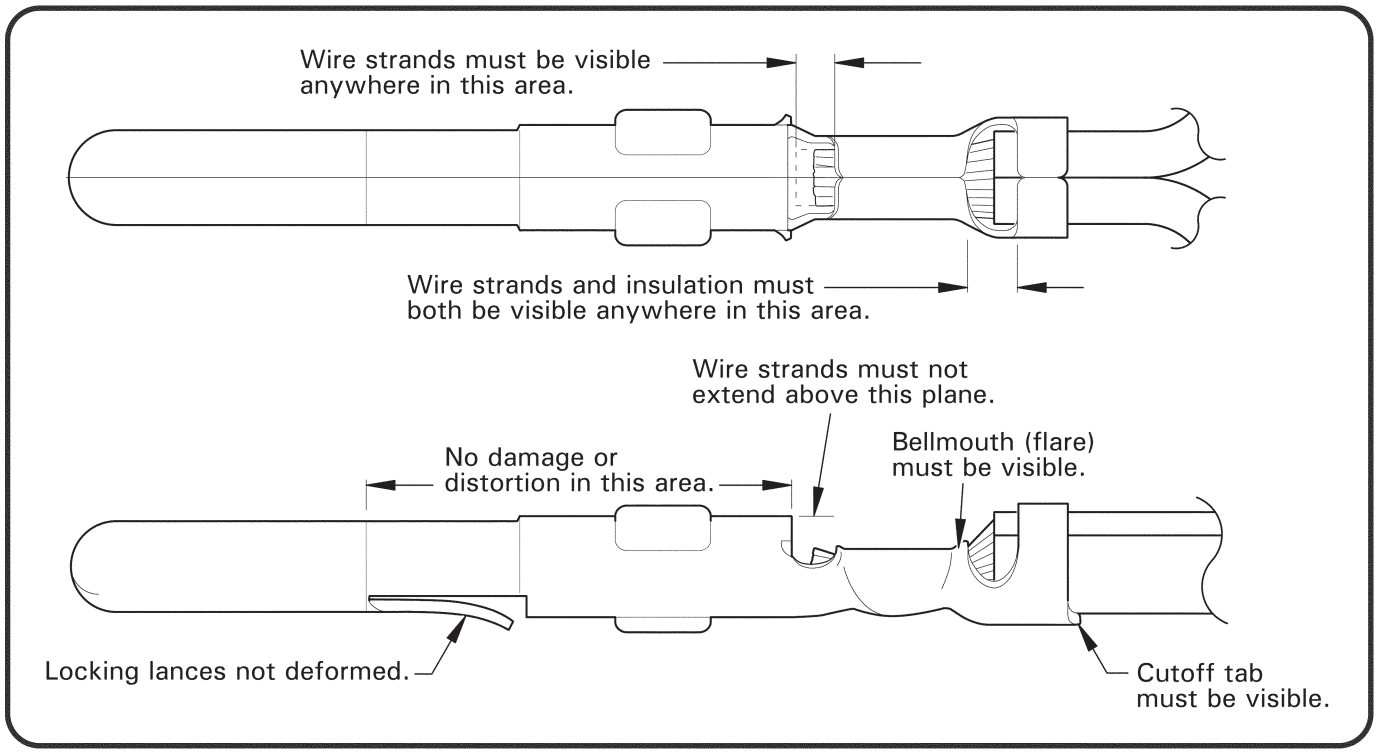


FIGURE 20-5 CRIMP INSPECTION