



Trouble shooting guide

Trouble shooting

DPR/PSR Problem	Probable cause	Suggested solution
Leak	Insufficiently tightened, shallow bite	Tighten the nut according to correct number of turns, direct assembly only for maintenance/repair
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings, use of recommended pre-assembly machines
		Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Use of pre-assembly machines e.g. EO-KARRYMAT, EOMAT ECO, EOMAT UNI
		Pre-assemble joints away from installation to ensure proper bite
		Check visible collar
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
		Check visible collar
		Make sure tube is lubricated at assembly
	Damaged fitting	Check for damage, replace damaged parts
		Handle all components carefully
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak, from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
Tube fractured behind the nut	Fatigue failure of tube under vibration	Review final tightening process, undertightening reduces vibration resistance
		Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
		Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance
Crack	Insufficiently tightened, shallow bite	Tighten the nut according to correct number of turns
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Mark nut and body to indicate correct assembly
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Check visible collar

DPR/PSR Problem	Probable cause	Suggested solution
Crack	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, ...) do not exceed fitting performance
Tube blow out	Standpipe fitting, improper final assembly	Use swivel nut fitting
	Cold welded threads on stainless steel fittings	Use "EODUR" stainless steel fittings from Parker (with silver plated nut threads) and always lubricate threads with EO Niromont fluid (not hydraulic oil)
	Use of worn or unsuitable pre-assembly tools	Check tools regularly and replace worn tools
		Keep tooling clean and oiled plus check cone regularly with "KONU" cone gauges every 50 assemblies
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
	Severe working conditions	Check visible collar
		Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, flow rate, ...) do not exceed fitting performance
		Check visible collar
	Ring installed in wrong direction	Install ring in proper orientation
		Use pre-assembled fitting or EO-2
		Always check assembly before final installation
	Steel ring used on stainless steel tube	Use stainless steel bite rings for stainless steel tube, preassembly necessary
	Stainless steel fitting not pre-assembled	Pre-assemble joint away from installation
		Use specified preassembly tools/machines
	Fitting body used as preassembly tool	Use specified preassembly tools, machine preset preferred
Short tube end fracture	Fatigue failure	Use swivel nut adapter (GZ ...)

EO-2 Problem	Probable cause	Suggested solution
Leak	Insufficiently tightened, shallow bite	Use of pre-assembly machines e.g. EO-KARRYMAT, EOMAT ECO, EOMAT UNI
	Insufficiently tightened	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Use original EO pre-assembly tools
		Check closed gap
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend

Trouble shooting

EO-2 Problem	Probable cause	Suggested solution
Leak	Tube not bottomed into fitting shoulder	Use hacksaw and guide not a plumbing – style tube cutter
		Use EO-2 MOK for big sizes
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
	Damaged fitting	Check for damage
		Handle all components carefully
	Damage to fitting cone	Make sure tube is bottomed at assembly
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
Sealing ring (DOZ) missing	Use plugs for transport of preassembled tubes. Check assembly before final installation	
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance
Crack	Insufficiently tightened	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
		Pre-assemble joints away from installation to ensure proper bite
		Use original EO preassembly tools
		Check closed gap
Tube blow out	Cold welded threads on stainless steel fittings	Use “EODUR” stainless fittings from Parker (with silver plated nut threads) and always lubricate threads with EO Niromont fluid (not hydraulic oil)
	Tube not bottomed into fitting shoulder	Cut tube to correct length
		Observe min. straight length before tube bend
		Use hacksaw and guide not a plumbing – style tube cutter
		Carefully deburr tube end – no heavy chamfers
		Push tube firmly into cone
		Use EO-2 MOK for big sizes
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks, flow rate ...) do not exceed fitting performance
	Fitting undertightened	Tighten the nut until cap between retaining and sealing ring is closed
		Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings

EO-2 Problem	Probable cause	Suggested solution
Tube blow out	Fitting undertightened	Mark nut and body to indicate correct assembly Use recommended lubrication Pre-assemble joints away from installation to assure proper bite
	FM ... steel is used	Use exclusively FM stainless steel with stainless steel on stainless steel tube, for combination of steel fitting/ stainless steel tube use FM... SSA nut
Short tube end fracture	Fatigue failure	Use swivel nut adapter (GZ...)

EO2-FORM		
Problem	Probable cause	Suggested solution
Leak	Insufficiently tightened, shallow bite	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Damaged fitting	Check for damage
		Handle all components carefully
	Damage of fitting cone	Make sure tube is bottomed at assembly
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Sealing ring (DOZ) missing	Use plugs for transport of preassembled tubes. Check assembly before final installation
	Incorrect tube forming	Check assembly before installation
		Use correct tool according to tube diameter, wall thickness and material
		Regularly check tools for wear and damage
		Replace damaged tooling
Use specified lubricant LUBSS on forming process		
Misalignment	Stress free installation. Flanged tube end needs contact to stud ends before final tightening. Check length and bends of tubing to ensure this	
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

Trouble shooting

O-Lok® Problem	Probable cause	Suggested solution
Leak	Damaged Trap-Seal	Hold sealing surfaces together until nut is firmly tightened
	Missing Trap-Seal	Use genuine Parker O-Lok® fittings with Trap-Seal groove (CORG)
	Extruded Trap-Seal	Ensure proper alignment
		Tightened to proper torque
		Use genuine Parker O-Lok® fittings with Trap-Seal groove (CORG)
	Pinched Trap-Seal due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Uvertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings. Use recommended torque or FFFT method
	Damaged fitting	Check for damage
		Handle all components carefully
	Poor surface quality of flange	Spiral marks can be avoided by proper deburring of tubes, particular the tube I.D.
		Clean tools, remove metal particles from pin
	Hidden crack	Check for cracks, replace if necessary
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

Triple-Lok® Problem	Probable cause	Suggested solution
Leak	Damaged fitting	Check for damage
		Handle all components carefully
	Contamination between sealing surfaces	Keep all components clean
	Hidden crack	Check for cracks, replace if necessary
	Mismatch of components	Select all components according to system application and product specification
		Use genuine Parker components
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant

Triple-Lok® Problem	Probable cause	Suggested solution
Leak	Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings. Use recommended torque or FFFT method
	Scratches in Tube ID and flare area	Use Parflange process to improve surface quality
Tube fractured behind the nut	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
Crack	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

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Weld nipples Problem	Probable cause	Suggested solution
Leak	Misalignment	Stress free installation
		Fix weld nipple to tube in application before finishing the welding
	Damaged O-ring	Inspect O-ring before final installation. Make sure that O-ring is not twisted at installation lubricate O-ring
	Missing O-ring	Assemble proper O-ring
	Extruded O-ring	Ensure proper alignment
	Pinched O-ring due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
Tube fractured behind the nut	Fatigue failure of tube under vibration	Check for damage
		Handle all components carefully
		Stress free installation
	Severe working conditions	Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
Crack	Fatigue failure of tube under vibration	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance
		Stress free installation
		Proper use of clamps
	Severe working conditions	Bulkhead connection and hose to isolate joints from vibration

Trouble shooting

Flanges connection Problem	Probable cause	Suggested solution
Leak	Misalignment	Stress free installation
	Damaged O-ring	Inspect O-ring before final installation. Make sure that O-ring is not twisted at installation lubricate O-ring
	Missing O-ring	Assemble proper O-ring
	Extruded O-ring	Ensure proper alignment
		Tightened bolts to recommended torque
	Pinched O-ring due to air bleeding	Use bleed valves (PNLOBA/FNLBA) or test points EMA and hose for bleeding
	Phantom leak from assembly lubricant	Carefully identify proper source of leak
		Don't over use lubricant
	Undertightening	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Unequal tightening	For flanges with more than 2 screws: see assembly instruction in what order the screws need to be tightened
Tube fractured behind the nut	Fatigue failure of tube under vibration	Check for damage
		Handle all components carefully
	Severe working conditions	Stress free installation
Crack	Fatigue failure of tube under vibration	Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

Leaks from ports Problem	Probable cause	Suggested solution
Leak	O-ring sealing is missing/damaged	Replace with new O-ring
	Fitting not tightened properly, Undertightening	Retighten to appropriate specification
	Undertightened at initial assembly	Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
		Use recommended lubrication
	Adjustable stud not assembled properly	Repeat with appropriate assembly torque
	O-ring pinched	Proper assembly procedure
	Fitting vibrates loose	Redesign system
		Clamping/Check the assembly torque
		Stressed joints
	Threads damaged	Replace fitting
	Use of tapered threads (NPT/BSPT/+++)	Use fittings with soft sealing O-ring/ED sealing

Leaks from ports Problem	Probable cause	Suggested solution
Leak	Port stud end Form B	Sealing edge Form B is damaged replace fitting
	Sealing surface is damaged	Rework sealing surface
Fitting vibrates loose	Undertightened at initial assembly	Tighten the nut according to correct torque Use correct spanners and spanner extensions especially for larger sizes and stainless steel fittings
	Torsion forces on assembly	Use clamps or bulkhead fittings to isolate twisting hose Avoid stress at initial assembly
Fractured stud	Severe overtightening	Do not exceed specified tightening instructions
	Fatigue failure of tube under vibration	Stress free installation
		Proper use of clamps
		Bulkhead connection and hose to isolate joints from vibration
	Severe working conditions	Make sure that operating conditions (pressure, corrosion, temperature, pressure peaks ...) do not exceed fitting performance

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Triple-Lok® 1025/1050		
Problem	Probable cause	Suggested solution
Tube slips in die during flanging or flaring	Tube undersized	Use tube within tolerance
	Die grip surface dirty	Clean with solvent
	Die grip surface worn	(do not use any wire brush) Replace Die
Flange/flare diameter too small	Tube slipped in die	See problem "Tube slips in die ..."
	Incorrect pin	Use correct pin for tube size
	Die needs adjustment/incorrect die.	Contact Parker Rep./Use correct die
	Tube was not inserted to tube stop	Insert tube to tube stop
Flange/flare diameter too large	Tube forced against tube stop	Do not force tube against tube stop
	Die needs adjustment/incorrect die	Contact Parker Rep./Use correct die
	Incorrect pin and/or tube wall	Use correct pin for tube size
Flange/flare out of round	Tube not cut squarely	Cut tube squarely, within $\pm 1^\circ$
	Tube not supported properly	Support tube in line with dies
	Obstruction in die holder	Clean and remove debris
	Tube wall thickness varies	Use good quality tube
	Incorrect pin and/or tube wall	Use correct pin for tube size
Cracked flange/flare	Poor tube quality	Use recommended quality tube
	Too hard tube	Use recommended quality tube
	Heavy chatter during deburring	Eliminate chatter in deburring
Scored, pitted flange/ flare surface	Improper/lack of lubrication on pin	Use recommended lubricant
	Tube not properly deburred	Deburr and remove filings
	Tube not properly cleaned	Clean to remove filings
	Pin not cleaned	Keep pin clean but lubricated
Tube slips in die during flanging or flaring	Tube undersized	Use tube within tolerance
	Die grip surface dirty	Clean with solvent
	Die grip surface worn	(do not use any wire brush) Replace Die

Trouble shooting

O-Lok® 1025/1050		
Problem	Probable cause	Suggested solution
Flange/flare diameter too large	Tube forced against tube stop	Do not force tube against Tube stop
	Die needs adjustment/	Contact Parker
	Incorrect die	Use correct die
	Incorrect pin and/or tube wall	Use correct pin for tube size
	Sleeve not located properly in die	Locate sleeve in die cavity correctly
Flange/flare not round	Tube not cut squarely	Cut tube squarely, within $\pm 1^\circ$
	Tube not supported properly	Support tube in line with dies
	Obstruction in die holder	Clean and remove debris
	Tube wall thickness varies	Use good quality tube
	Incorrect pin and/or tube wall	Use correct pin for tube size
Cracked flange/flare	Poor tube quality	Use recommended quality tube
	Tube too hard	Use recommended quality tube
	Heavy chatter during deburring	Eliminate chatter in deburring
Scored, pitted flange/flare surface	Improper/lack of lubrication on pin	Use recommended lubricant
	Tube not properly deburred	Deburr tube and remove filings
	Tube not properly cleaned	Clean tube to remove filings
	Pin not cleaned	Keep pin clean and lubricated
Flange pin breaks during flanging	Incorrect pin and/or tube wall/ or wrong pin for tube material	Use correct pin for tube size/material