

Cylinder Maintenance Evaluation Report

Prepared For: XYZ Customer

Date: June 11, 2019

Prepared By: Edmonton Valve & Fitting Inc.

Custom Solutions

Table of Contents

Service Description	3
3.1 Maintenance Procedures	4
3.2 Terms & Conditions	5
3.2 Pricing Breakdown & Customer Signature	6
4.0 Observation Evaluation and Recommendation	7

Service Description

Cylinder Maintenance

June 11, 2019

Attention: Mr.Customer

Company: XYZ Company

Prepared By: Edmonton Valve & Fitting

- Stacey Phillips, Swagelok Field Engineer
- Adam Telenko, Sales & Service
- Derek Green, Project Manager

1.0 Service Description

The cylinder maintenance will consist of Customer sending EVF cylinders in batches with the intent of EVF visually evaluating them for any deformities and then performing a hydrostatic or pneumatic leak test for 10 minutes to ensure they do not leak.

2.0 Fluid System Components

Not all valves and fittings are Swagelok stainless and/or SilcoNert coated. All NPT or ISO tapered connections will be made with PTFE tape. Initial assessment indicates mix match of components with different unidentified manufacturers.

3.0 Exceptions to Customer P&ID, BOM, and/or Specifications

- Any non-Swagelok component will be replaced with Swagelok components
- Any visual deformities that Swagelok identifies will be replaced with new valves, fittings or cylinders
- Any non-cleaned cylinders will be rejected
- All Propylene cylinders will require a decontamination sheet as well as an MSDS sheet to accompany them
- All other cylinders will require a de-contamination sheet to accompany them as well as an MSDS sheet
- If Customer would like Edmonton Valve to clean non-Propylene cylinders, they will
 provide the cleaning procedure as well as the MSDS sheets. If this documentation is
 not provided, the cylinders will be rejected

3.1 Maintenance Procedures

Procedures are as follow:

Non-Media Cleaned Cylinders

Non-Media Non-Cleaned Cylinders

Media Cleaned Cylinders

RECEIVING INSPECTION

- Tags match description
- # of cylinders matches what customer sent
- Spreadsheet updated

RECEIVING INSPECTION

- · Tags match description
- # of cylinders matches what customer sent
- Spreadsheet updated

CLEANING

- Customer to provide cleaning procedure for each cylinder
- Customer to provide MSDS for each non-cleaned cylinder
- Cleaning procedure to follow customer documentation

MAINTENANCE

- Visual inspection of valves
- Are there wrench marks on handle?
- Does the valve cycle normally?
- Any discoloration or damage on the body of valve?
- Any nicks in the SS body?
- Is the part number visible?
- Cylinder deformation measure length of cylinder, measure circumference of cylinder at 2 ends and middle
- Any nicks in SS outer body cylinder?
- Were threads able to be inspected? Was tape visible on valves?

1000 PSI hydrotest for 10 MIN

Paperwork attached with pass/fail

HYDROTEST

MAINTENANCE

- Visual inspection of valves
- Are there wrench marks on handle?
- Does the valve cycle normally?
- Any discoloration or damage on the body of valve?
- Any nicks in the SS body?
- Is the part number visible?
- Cylinder deformation measure length of cylinder, measure circumference of cylinder at 2 ends and middle
- Any nicks in SS outer body cylinder?
- Were threads able to be inspected? Was tape visible on valves?

HYDROTEST

- 1000 PSI hydrotest for 10 MIN
- Paperwork attached with pass/fail

RECEIVING INSPECTION

- Tags match description
- # of cylinders matches what customer sent
- Spreadsheet updated
- Ensure De-Contamination and cleaning procedure is done prior to receiving
- If cylinder is not cleaned, they will be rejected

MAINTENANCE

- Visual inspection of valves
- Are there wrench marks on handle?
- Does the valve cycle normally?
- Any discoloration or damage on the body of valve?
- Any nicks in the SS body?
- Is the part number visible?
- Cylinder deformation measure length of cylinder, measure circumference of cylinder at 2 ends and middle
- Any nicks in SS outer body cylinder?
- Were threads able to be inspected? Was tape visible on valves?

LEAK TEST

- 500 PSI Argon Leak test for 10 MIN
- Paperwork attached with pass/fail
- Use Crystal Nuvision gauge to creak leak report
- No snoop to be used

4

3.2 Terms & Conditions

Swagelok Integrated Services Terms and Conditions, rev-

1. Terms of Contract. Unless Customer notifies the entity providing this Quotation (Swagelok or an authorized Swagelok Distributor, hereinafter collectively referred to as "Swagelok") in writing of any specific exceptions to these Swagelok Integrated Services Terms and Conditions ("Terms") prior to submission of any order or any other form accepting the Quotation, Customer's placement of any order or any other Quotation acceptance shall constitute Customer's acceptance of the Terms contained herein. Any Customer response to, or confirmation of, this quotation which states different or additional terms is specifically rejected unless specifically agreed to in writing by Swagelok. Swagelok's failure to object to provisions contained in any communication from Customer will not be deemed a waiver of the Terms contained herein.

2. Warranty.

- (a) Assembly Workmanship: The Assembly is warranted to be free from defect in workmanship for the life of the Assembly.
- (b) Swagelok® hardware product components: The nonelectrical components shall be free from defects in material and workmanship for the life of the products. The electrical components are warranted to be free from defects in material and workmanship for twelve months from the date of Assembly shipment.
- (c) Software and Firmware: Unless otherwise provided in a separate Swagelok or third-party license agreement, any software or firmware provided with this Assembly is warranted for a period of one year from date of shipment that the media on which the software is furnished shall be free from defects in material and workmanship and conform to the specifications delivered in connection with and when used with the Assembly. Swagelok makes no warranty, expressed or implied, that the operation of the software or firmware will be uninterrupted or error free.
- (d) Non-Swagelok product components: The original manufacturer's warranty shall apply to any non-Swagelok-product component to the extent the original manufacturer's warranty may be passed through to the Customer.
- (e) The Customer's remedies shall be limited to replacement and installation of any parts that fail through a defect in material or workmanship.
- (f) IT IS EXPRESSLY AGREED THAT THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES AND LIABILITIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.
- 3. <u>Limitation of Liability</u>. IN NO EVENT, REGARDLESS OF CAUSE, SHALL SWAGELOK, ITS PARENT COMPANY OR ANY OTHER PARENT SUBSIDIARY, OR ANY DISTRIBUTOR ASSUME RESPONSIBILITY OR BE LIABLE FOR: (a) PENALTIES OR PENALTY CLAUSES OF ANY DESCRIPTION, (b) TO THE EXTENT PERMITTED BY LAW, INDEMNIFICATION OF USER OR OTHERS FOR COSTS, DAMAGES, OR EXPENSES EACH ARISING OUT OF OR RELATED TO THE PARTS OR SERVICES PROVIDED, (c) CERTIFICATION, UNLESS OTHERWISE SPECIFICALLY PROVIDED FOR IN WRITING BY

- SWAGELOK, OR (d) INDIRECT OR CONSEQUENTIAL DAMAGES UNDER ANY CIRCUMSTANCE, INCLUDING ANY LOST PROFITS, BUSINESS INTERRUPTION, OR OTHER DAMAGES. IN NO EVENT SHALL SWAGELOK OR DISTRIBUTOR LIABILITY EXCEED THE PURCHASE PRICE REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT OR TORT, INCLUDING NEGLIGENCE. THE FOREGOING WARRANTY AND LIMITATION OF LIABILITY STATES CUSTOMER'S ENTIRE AND EXCLUSIVE LIABILITY AND SOLE REMEDY.
- 4. <u>Modification or Cancellation</u>. Following Customer acceptance of the Quotation by placement of a purchase order or signing of Quotation document, any modification to the Assembly may result in additional charges. Should Customer cancel after Customer's acceptance of this Quotation or placement of a purchase order, Customer shall pay for the costs incurred in the performance of the work on the Assembly up to termination; the sum to be paid will not exceed the amount quoted for the Assembly.
- 5. <u>Force Majeure</u>. Should delivery of Assembly be delayed or undeliverable due to acts beyond the control of Swagelok, Swagelok shall not be liable for any late delivery charges, liquidated damages, or other claims for any failure or omission in connection with the Assembly. Customer shall be given prompt notice of either the circumstance(s) causing the delay and the best estimate as to the expected period of delay, or of notice that the Assembly is undeliverable.
- 6. <u>Safe Product Selection.</u> When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Assembly and component function, material compatibility, and adequate ratings are the responsibilities of the Customer, or of Swagelok, when Swagelok has provided the foregoing. Proper installation, operation, and maintenance are the responsibility of the Customer. Customer shall review all bill of materials, product information, drawings, and any other Assembly documentation to verify that it meets Customer needs.
- 7. Choice of Law and Venue. (a) For claims that arise in the United States, the laws of the State of Ohio, USA shall govern and be used to construe Terms and any claims or disputes related to these Terms or Assembly. Such laws shall exclude conflict of law provisions and the UN Convention on Contracts for the International Sale of Goods. All actions or proceedings under or relating to this agreement shall be resolved in a state, or federal Northern District of Ohio court located in that jurisdiction; provided, however, that in Swagelok's discretion such an action may be heard in some other place designated by Swagelok if necessary to acquire jurisdiction over third parties to consolidate the dispute into one action; (b) for claims that arise outside of the United States, all disputes shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce. The number of arbitrators shall be three; the place of arbitration shall be London; and the language to be used in the arbitral proceedings shall be English..
- 8. Exclusive Terms and Conditions. It is expressly agreed that these terms, together with the Assembly written quotation, contain the complete agreement between Customer and Swagelok, and no agreement or other understanding purporting to modify them shall be binding upon Swagelok without Swagelok's written consent.

3.2 Pricing Breakdown & Customer Signature

3.4 Customer Signature

Customer Approval

Please review this Cylinder Maintenance Evaluation Report, any catalog data sheet(s), accompanying drawing(s), specification(s), or Bill of Material(s) incorporated herein by reference, (collectively "Documentation"). Please verify the accuracy of the information provided.

By signing below, Customer accepts and authorizes assembly in accordance with the Cylinder Maintenance Evaluation Report. This Quotation and your order are subject to the Custom Solutions Terms and Conditions on page 5, and incorporated by reference, unless otherwise specified in writing by Edmonton Valve & Fitting Inc. Responsibility for certifying the installation and readiness for operation is the responsibility of the customer.

Customer Name (print):	
Customer Signature:	
Date:	

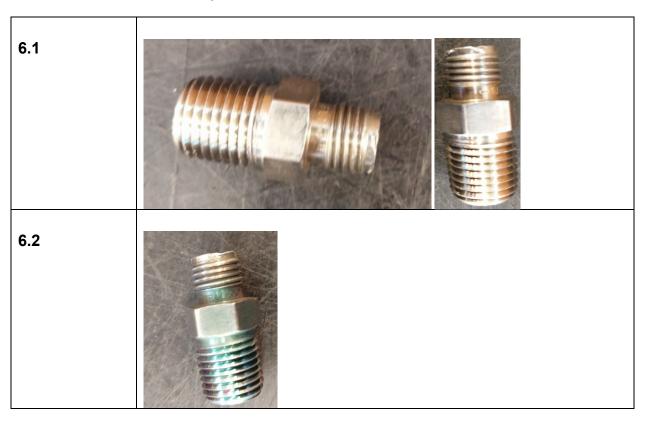
4.0 Observation, Evaluation and Recommendation

	500-SST-DOT-1800 Propylene CAR BATERTON N. TILL OFFICIATOR THE SOUTH OF THE CONTRACTOR THE SOUTH O	
CYLINDER	EDMON-500-SST-DOT-18	00-PROPYLENE
PARTS	OBSERVATION	RECOMMENDATION
FITTING 1	Threads are damaged. (See 6.1)	Replace all damaged threaded fittings. Possible thread galling on reinstallation.
FITTING 2	Threads are damaged. (See 6.2)	Swagelok cannot ensure leak points on reused fittings.
FITTING 3	Threads are acceptable. (See 6.3)	Swagelok cannot ensure leak points on reused fittings.
SS-43GXF4-12457	Threads are acceptable. Body has wrench marks. Handle is worn. (See 6.4)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.
SS-14DKM4-12457	Threads are acceptable. Body has wrench marks. Handle is worn. (See 6.5)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.
SS-DTM4-F4-104-12457	Threads are acceptable inner and outer. (See 6.6)	Outage tube could be reused. Customer to advice.
SS-16DKM4-F4-1-12457	Threads are acceptable. Body has wrench marks. Handle is in excellent condition. Cannot verify condition of rupture disk. (See 6.7)	Unknown if rupture disk is blown. As per customer, all rupture disk valves to be replaced.
NON-SWAGELOK CYLINDER	Threads are acceptable. Rust on tips of outer cylinder. (See 6.8)	Replace all rusted cylinders. Unable to determine structural integrity of holding pressure.

EDMON-500-SST-1800-PROPYLENE

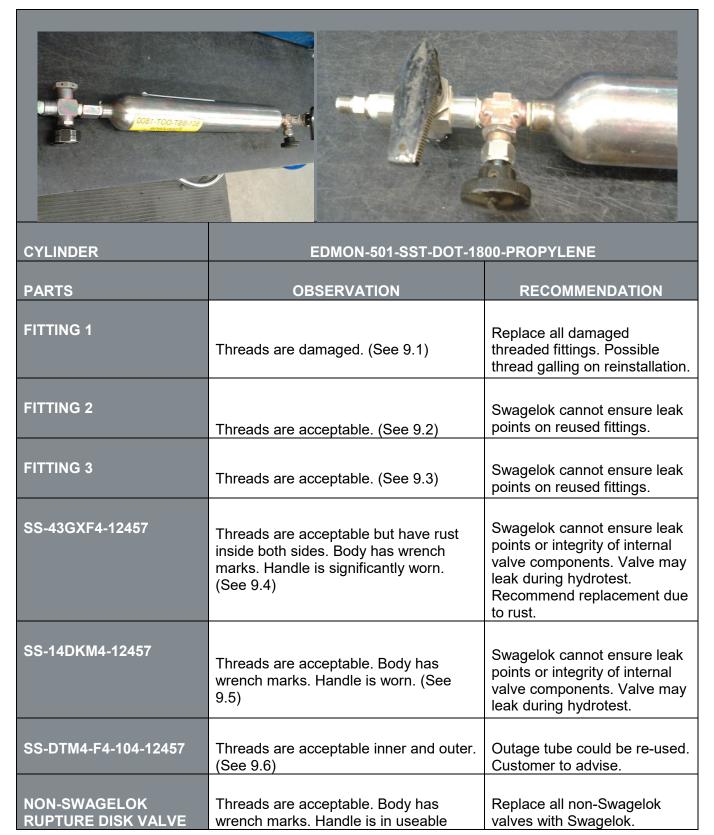
O.D Measurement of Cylinder	Location	Measurement (in)	O.A.L
(Yellow Sticker Facing Operator)	Side	1.997	
	Middle	1.994	13.75"
	End	1.998	

6.0 Detail Pictures







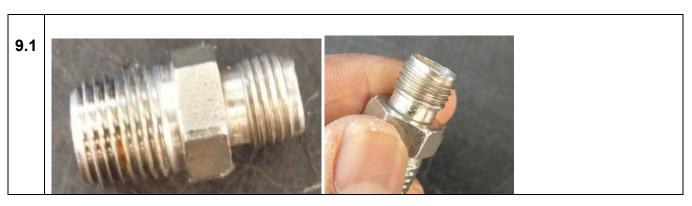


	condition. Cannot verify condition of rupture disk. (See 9.7)	Threads are acceptable but have rust inside both sides. Body has wrench marks. Unknown if rupture disk is blown. As per customer, all rupture disk valves to be replaced.
NON-SWAGELOK CYLINDER	Threads are acceptable. Significant rust on tips of outer cylinder. (See 9.8)	Replace all rusted cylinders. Unable to determine structural integrity of holding pressure.

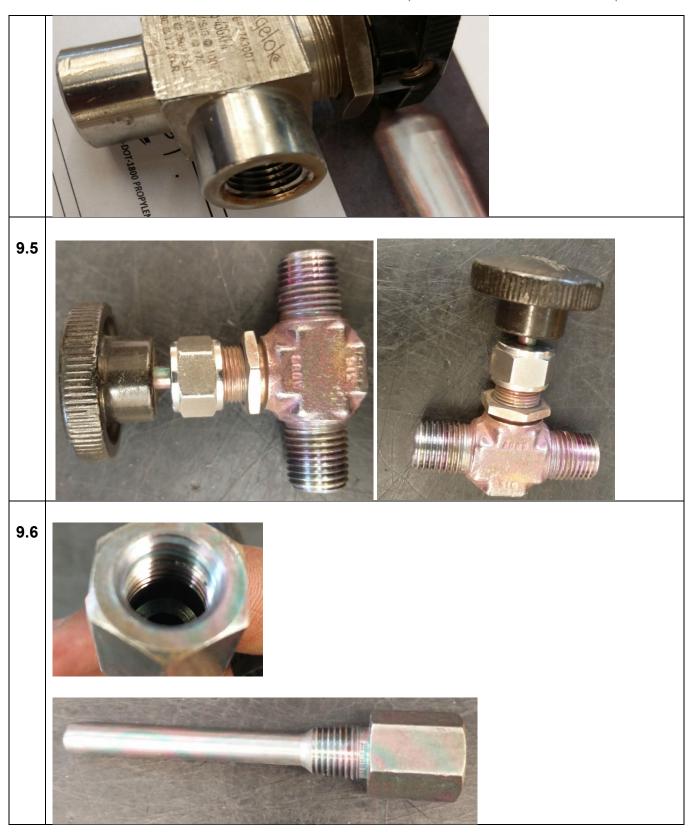
EDMON-501-SST-1800-PROPYLENE

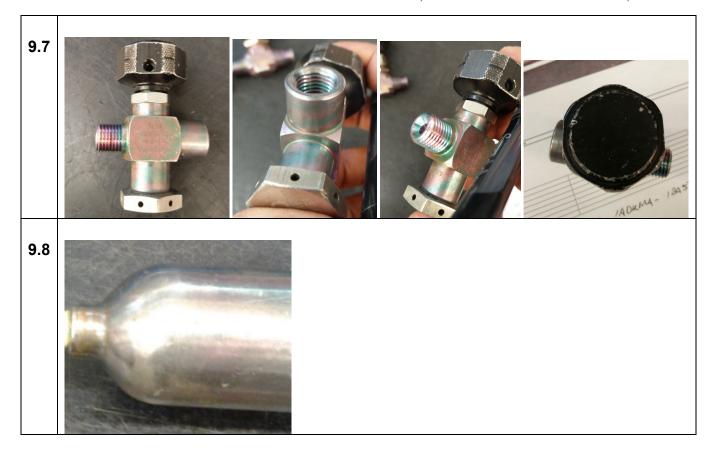
O.D Measurement of Cylinder	Location	Measurement (in)	O.A.L
(Yellow Sticker Facing Operator)	Side	1.999	
	Middle	2.000	13.75"
	End	1.998	

9.0 Detail Pictures









502-SST-DOT-1800 Propulané				
CYLINDER	EDMON-502-SST-DOT-18	00-PROPYLENE		
PARTS	OBSERVATION	RECOMMENDATION		
FITTING 1	Threads are damaged. (See 12.1)	Replace all damaged threaded fittings. Possible thread galling on reinstallation.		
FITTING 2	Threads are acceptable. (See 12.2)	Swagelok cannot ensure leak points on reused fittings.		
FITTING 3	Threads are acceptable. (See 12.3)	Swagelok cannot ensure leak points on reused fittings.		
SS-43GXF4-12457	Threads are acceptable. Body has wrench marks. Handle is worn. (See 12.4)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.		
SS-14DKM4-12457	Threads are acceptable. Body has wrench marks. Handle is worn. (See 12.5)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.		
SS-DTM4-F4-104-12457	Threads are acceptable inner and outer. (See 12.6)	Outage tube could be reused. Customer to advise.		
NON-SWAGELOK RUPTURE DISK VALVE	Threads are acceptable. Body has wrench marks. Handle is in excellent condition. Cannot verify condition of rupture disk. (See 12.7)	Replace all non-Swagelok valves with Swagelok. Unknown if rupture disk is blown. As per customer, all rupture disk valves to be replaced.		
NON-SWAGELOK CYLINDER	Threads are acceptable. Rust on tips of outer cylinder. (See 12.8)	Replace all rusted cylinders. Unable to determine structural integrity of holding pressure.		

EDMON-502-SST-1800-PROPYLENE

O.D Measurement of Cylinder	Location	Measurement (in)	O.A.L
(Yellow Sticker Facing Operator)	Side	2.000	
	Middle	1.995	13.75"
	End	2.000	

12.0 Detail Pictures





12.4







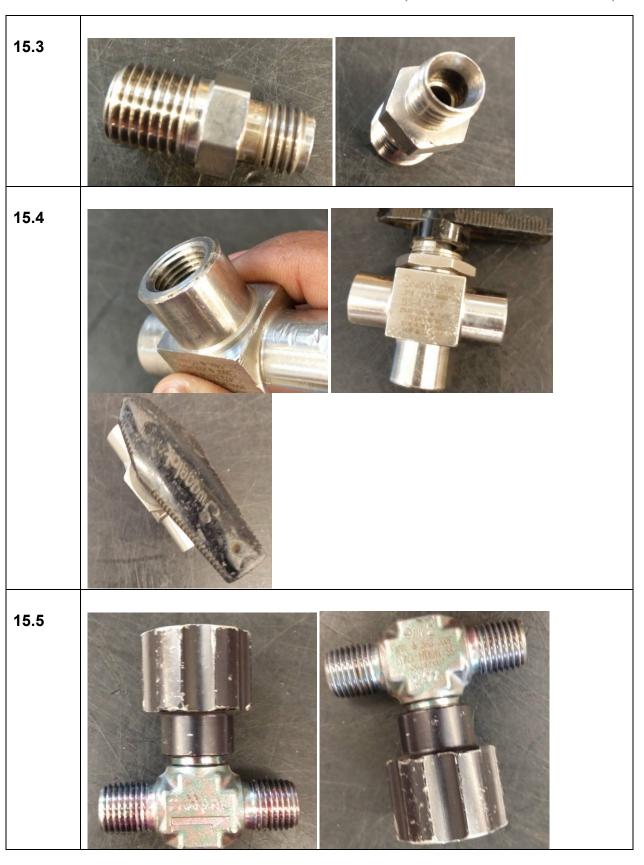
CYLINDER	EDMON-503-SST-DOT-18	00-PROPYLENE		
PARTS	OBSERVATION	RECOMMENDATION		
FITTING 1	Threads are acceptable. (See 15.1)	Swagelok cannot ensure leak points on reused fittings.		
FITTING 2	Threads are acceptable. (See 15.2)	Swagelok cannot ensure leak points on reused fittings.		
FITTING 3	Threads are acceptable. (See 15.3)	Swagelok cannot ensure leak points on reused fittings.		
SS-43GXF4-12457	Threads are acceptable. Body has wrench marks and damage at tip. Handle is worn significantly. (See 15.4)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.		
SS-14DKM4-12457	Threads are acceptable. Body has wrench marks. Handle is worn. (See 15.5)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.		
SS-DTM4-F4-104-12457	Threads are acceptable inner and outer. (See 15.6)	Outage tube could be reused. Customer to advise.		
NON-SWAGELOK RUPTURE DISK VALVE	Threads are acceptable. Body has wrench marks. Handle is in excellent condition. Cannot verify condition of rupture disk. (See 15.7)	Replace all non-Swagelok valves with Swagelok. Unknown if rupture disk is blown. As per customer, all rupture disk valves to be replaced.		
NON-SWAGELOK CYLINDER	Threads are acceptable. Rust on tips of outer cylinder. (See 15.8)	Replace all rusted cylinders. Unable to determine structural integrity of holding pressure.		

EDMON-503-SST-1800-PROPYLENE

O.D Measurement of Cylinder	Location	Measurement (in)	O.A.L
(Yellow Sticker Facing Operator)	Side	2.002	
	Middle	2.006	13.75"
	End	2.000	

15.0 Detail Pictures















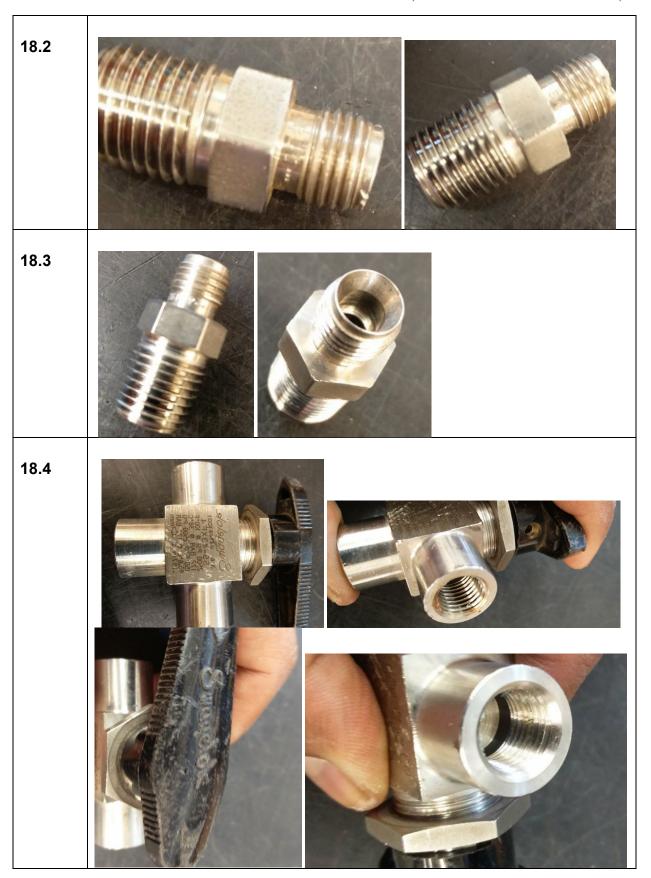
CYLINDER	EDMON-504-SST-DOT-1800-PROPYLENE			
PARTS	OBSERVATION	RECOMMENDATION		
FITTING 1	Threads are acceptable. (See 18.1)	Swagelok cannot ensure leak points on reused fittings.		
FITTING 2	Threads are damaged. (See 18.2)	Replace all damaged threaded fittings. Possible thread galling on reinstallation.		
FITTING 3	Threads are acceptable. (See 18.3)	Swagelok cannot ensure leak points on reused fittings.		
SS-43GXF4-12457	Threads are acceptable. Body has wrench marks. Handle is worn. There is rust build up on one side of female NPT side. (See 18.4)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.		
SS-14DKM4-12457	Threads are acceptable. Part number is not visible. Body has wrench marks. Handle is worn. (See 18.5)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.		
SS-DTM4-F4-104-12457	Threads are acceptable inner and outer. (See 18.6)	Outage tube could be re-used. Customer to advise.		
NON-SWAGELOK RUPTURE DISK VALVE	Threads are acceptable. Body has wrench marks. Handle is in excellent condition. Cannot verify condition of rupture disk. (See 18.7)	Replace all non-Swagelok valves with Swagelok. Unknown if rupture disk is blown. As per customer, all rupture disk valves to be replaced.		
NON-SWAGELOK CYLINDER	Rust found in threads. Darkening on each side of outer layer. Possible Sulfinert coating worn off. (See 18.8)	Visually different ends. Replace all rusted cylinders. Unable to determine structural integrity of holding pressure.		

EDMON-504-SST-1800-PROPYLENE

O.D Measurement of Cylinder	Location	Measurement (in)	O.A.L
(Yellow Sticker Facing Operator)	Side	1.966	
	Middle	1.985	13.75"
	End	1.987	

18.0 Detail Pictures

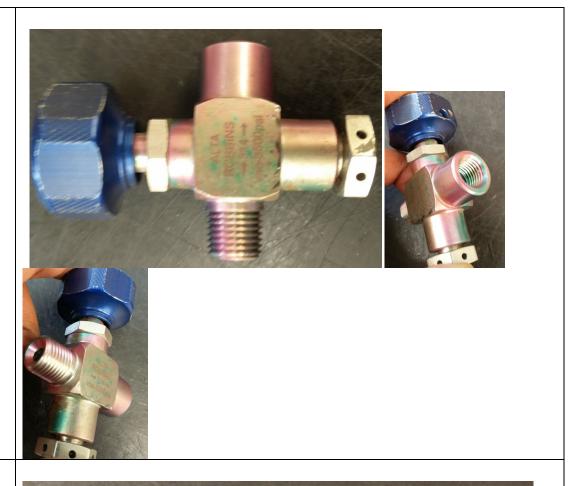












18.8



Section 1 to 1					
CYLINDER	EDMON-505-SST-DOT-1800-PROPYLENE				
PARTS	OBSERVATION	RECOMMENDATION			
FITTING 1	Threads are damaged. (See 22.1)	Replace all damaged threaded fittings. Possible thread galling on reinstallation.			
FITTING 2	Threads are damaged. (See 22.2)	Replace all damaged threaded fittings. Possible thread galling on reinstallation.			
FITTING 3	Threads are damaged. (See 22.3)	Replace all damaged threaded fittings. Possible thread galling on reinstallation.			
SS-43GXF4-12457	Threads are acceptable. Body has wrench marks. Handle is worn. (See 22.4)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.			
SS-14DKM4-12457	Threads are acceptable. Part number is not visible. Body has wrench marks. Handle is worn. (See 22.5)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.			
SS-DTM4-F4-104-12457	Threads are acceptable inner and outer. (See 22.6)	Outage tube could be reused. Customer to advise.			
NON-SWAGELOK RUPTURE DISK VALVE	Threads are acceptable. Body has wrench marks. Handle is in usable condition. Cannot verify condition of rupture disk. (See 22.7)	Replace all non-Swagelok valves with Swagelok. Unknown if rupture disk is blown. As per customer, all rupture disk valves to be replaced.			
NON-SWAGELOK CYLINDER	Threads are acceptable. No rust on tips of outer cylinder. (See 22.8)	Unable to determine structural integrity of holding pressure.			

EDMON-505-SST-1800-PROPYLENE

O.D Measurement of Cylinder	Location	Measurement (in)	O.A.L
(Yellow Sticker Facing Operator)	Side	1.979	
	Middle	1.985	13.75"
	End	1.979	

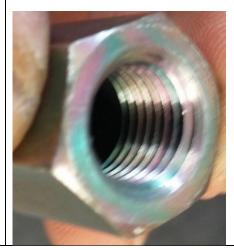
21.0 Detail Pictures

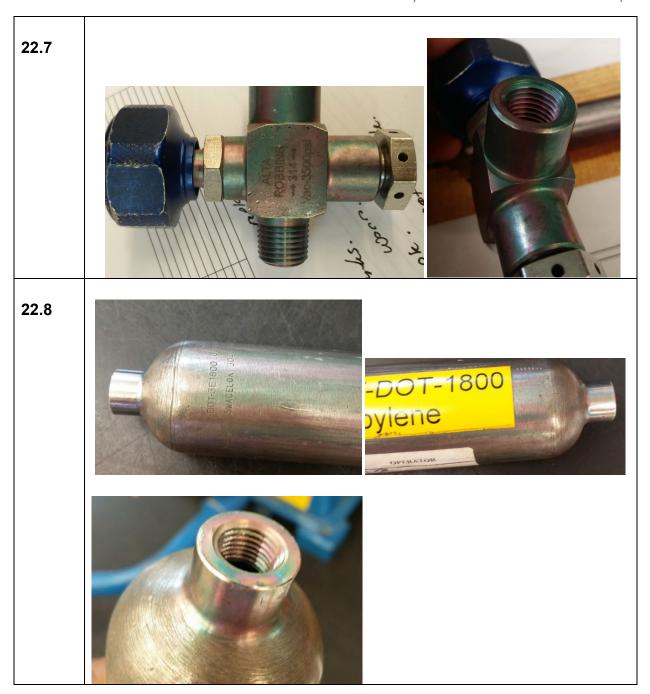












99-551-but-tex Programe					
CYLINDER	EDMON-506-SST-DOT-1800-PROPYLENE				
PARTS	OBSERVATION	RECOMMENDATION			
FITTING 1	Threads are damaged. (See 25.1)	Replace all damaged threaded fittings. Possible thread galling on reinstallation.			
FITTING 2	Threads are acceptable. (See 25.2)	Swagelok cannot ensure leak points on reused fittings.			
FITTING 3	Threads are acceptable. (See 25.3)	Swagelok cannot ensure leak points on reused fittings.			
SS-43GXF4-12457	Threads are acceptable. Body has wrench marks. Handle is worn significantly. (See 25.4)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.			
SS-14DKM4-12457	Threads are acceptable. Part number is not visible. Body has wrench marks. Handle is worn. (See 25.5)	Swagelok cannot ensure leak points or integrity of internal valve components. Valve may leak during hydrotest.			
SS-DTM4-F4-104-12457	Threads are acceptable inner and outer. (See 25.6)	Outage tube could be re-used. Customer to advise.			
NON-SWAGELOK RUPTURE DISK VALVE	Threads are acceptable. Body has wrench marks. Handle is in usable condition. Cannot verify condition of rupture disk. (See 25.7)	Replace all non-Swagelok valves with Swagelok. Unknown if rupture disk is blown. As per customer, all rupture disk valves to be replaced.			
NON-SWAGELOK CYLINDER	Threads are acceptable. No rust on tips of outer cylinder. (See 25.8)	Replace all rusted cylinders. Unable to determine structural integrity of holding pressure.			

EDMON-506-SST-1800-PROPYLENE

O.D Measurement of Cylinder	Location	Measurement (in)	O.A.L
(Yellow Sticker Facing Operator)	Side	2.001	
	Middle	2.015	13.75"
	End	2.010	

25.0 Detail Pictures









