ASSE International

PRODUCT (SEAL) LISTING PROGRAM



ASSE 1047-2021

Reduced Pressure Detector Backflow Prevention Assemblies

Separate, complete laboratory evaluation report fo	orms for each alternate orientation must be submitted to ASSE for review.
Manufacturer:	
	E-mail:
Address:	
	Laboratory File Number:
Model # Tested:	
Additional Model Information (i.e. orientation, s	
Date models received by laboratory:	Date testing began:
Date testing was completed	
If models were damaged during shipment, desc	ribe damages:
Prototype or production sample?	
Were all tests performed at the selected laborat	
If offsite, identify location:	

General information and instructions for the testing engineer:

The results within this report apply only to the models listed above.

There may be items for which the judgment of the test engineer will be involved. Should there be a question of compliance with that provision of the standard, a conference with the manufacturer should be arranged to enable a satisfactory solution of the question.

Should disagreement persist and compliance remain in question by the test agency, the agency shall, if the product is in compliance with all other requirements of the standard, file a complete report on the questionable items together with the test report, for evaluation by the ASSE Seal Control Board. The Seal Control Board will then review and rule on the question of compliance with the intent of the standard then involved.

Documentation of material compliance must be furnished by the manufacturer. The manufacturer shall furnish to the testing agency, a bill of material which clearly identifies the material of each part included in the product construction. This identification must include any standards which relate thereto.





SECTION 1 1.0 General

1.1	Application Does the purpose of the device agree with that of the standard? O Yes If questionable, explain: NOTE: This standard applies to single as well as manifold assemblies.	O No	O Questionable
1.2.1	Description Does the device conform to the product described in the standard? O Yes	O No	O Questionable
	If questionable, explain:		
	Is the assembly a RPDA or a RPDA-II?	ORPDA	O RPDA-II
	Identify the by-pass device on this assembly?		
1.2.2	Size Is the pipe size in accordance with Table 1? O Yes	inches O No	(mm) O Questionable
	If questionable, explain:		
1.2.3	Pressure Range What is the maximum working pressure as noted by the manufacturer?	psi	(kPa) 206.6 kPa)
1.2.4	Temperature Range What is the temperature range as stated by the manufacturer: Assemblies for cold water applications°F to°F (°C to		206.6 KPa)
	Assemblies for hot water applications °F to °F (°C to	°C)	
1.3.2.1	Relief Valve Connections Can a threaded pipe, a screwed fitting or a tubing be connected internal charge port? O Yes If questionable, explain:	ONo	ally to the dis- O Questionable
1.3.2.2	Were female pipe threaded connections so constructed that it would not them far enough to restrict the flow through the assembly or interfere with the flow through the		
	If questionable, explain:		
1.3.2.3	Repairability a) Is the assembly repairable and seats replaceable without removing the O Yes	ne assembly O No	from the line? O Questionable
	If questionable, explain:		
	b) Are replacement parts of the same size and model interchangeable w	vith the origir	nal parts? O Questionable
	If questionable, explain:		





	c) lis the by-pass check valve accessible for inspection, re	epairs or replace O Yes	acement? O No	0000	stionable			
	If questionable, explain:		─ No	— Que	stionable			
	d) Are seats replaceable?	O Yes	O No	O Que	stionable			
	If questionable, explain:							
1.3.2.4	Was the assembly delivered with the shut-off valves attack	hed?		Oyes	О No			
1.3.2.5	Were test cocks properly located as described below?	Oyes	ONo	O Que	stionable			
	If questionable, explain: a) On the supply side of the inlet shut-off valve. b) Between the inlet shut-off valve and the first check valve. c) Between the check valves. d) Between the second check valve and the outlet shut-of							
1.3.2.6	List the inlet and outlet thread size(s) for the test cocks. Inlet thread size: Outlet thread size:		inches inches		mm)			
	Do these sizes meet the minimum per Table 2?	O Yes _	O No	O Quest	ionable			
	If questionable, explain:							
1.3.2.7	State the manufacturer, size, location and model number #1 Shut-off:#2 Shut-off:				device:			
	By-Pass Line Shut-off valves:							
	Are shut-off valves resilient seated?	O Yes	O No	O Que	stionable			
	If questionable, explain:							
1.3.2.8	Was the assembly equipped with an air gap device? If yes, did it comply with ASME A112.1.3?			O Yes O Yes	O No O No			
1.3.3	Does the RPDA's by-pass line come equipped with a water							
	If questionable, explain:	O Yes	O No	O Que	estionable			
	Is the by-pass a listed product to the ASSE 1013 Standard	d?		Oyes	O No			
	State the manufacturer's size and model numbers of all meters used:							
	Does the RPDA-II's bypass line include a water meter or a valve, and 2 test cocks located between 2 shut-off valves the upstream shut-off and the bypass check valve and one before the downstream shut-off.	? One test co e downstrear O Yes	ck shall be n of the byp O No	located be pass check Que	tween			
	If questionable, explain:							





SECTION II

2.0	Tost Spoc	imone		
2.0	Test Spec	State the quantity of units provided for the evaluation of the orientation requested:		
		How many units were utilized during the laboratory evaluation?		
		Drawings Were assembly drawings, installation drawings and other technical data which are testing agency to determine compliance with this standard submitted with the asse	mbly?	_
		Were these drawings reviewed by the laboratory?	O Yes O Yes	O No O No
		Alternate Orientation: Has an alternate orientation, other than that marked on page 1 of this laboratory exform been requested? If yes, were the required additional samples submitted per Section 2.1? NOTE: Separate, complete laboratory evaluation report forms must be submitted for orientation. The correct number of devices specified in the standard for each intended must be submitted to the testing facility for evaluation to this standard.	O Yes O Yes or each alterr	O No O No nate
SEC1	ΓΙΟΝ III Performan	nce Requirements and Compliance Testing		
	3.1	Independence of Components How was the independence of components verified? O Drawing Revie O Physical cyclir O Other		ents
		In Compliance? O Yes O No If questionable, explain:	O Questi	onable
	3.2	Hydrostatic Test of Complete Assembly What is the maximum working pressure from section 1.2.3? The assembly was pressurized to: The test period was for: Were there any leaks or indications of damage to the assembly? Yes O No If questionable, explain:	(kPa)
	3.3	Seat Leakage Test for Shut-Off Valves Was the check valve removed? O Yes O No What was the pressure applied to the inlet side of the #1 shut-off valve?		
		How long was the pressure held? minutes psi	(kPa)
		Did you observe leakage into the assembly from the #1 shut-off valve sealing mem	\sim	O N =
		What was the pressure applied to the outlet side of the #2 shut-off valve?	O Yes	O No kPa)
		How long was the pressure held? minutes		, Kraj
		Did you observe leakage into the assembly from the #2 shut-off valve sealing mem	ber? O Yes	O No





3.4	Hydrostatic Backpressure To (for assemblies with a bypas) The bypass check was pressured.	s check around) psi	(kPa
	The test period was for Were there any leaks or indica	mi tions of damage	nutes to the bypass cl	heck? O Yes	рзі О No		estionable
	If questionable, explain:			J 168	——————————————————————————————————————	— Que	
3.5	Hydrostatic Backpressure Te Was the relief valve held close	d or isolated?				O Yes	ONG
	What was the pressure applied How long was the pressure he Was there any evidence of lea	ld? mi kage at sight glas	nutes ss installed at te	est cock #		O Yes	kPa
	What was the pressure applied How long was the pressure he Was there any evidence of lea	ld? mi	nutes	est cock #	psi !3?	(kPa O No
3.6	Allowable Pressure Loss Was the assembly installed pe If no, explain:					O Yes	Ома
	What was the rated water flow What was the supply pressure What pressure loss through the	used for this test	:? _				L/s kPa
	What was the pressure loss at 150% of Rated Flow 200% of Rated Flow				psi psi psi	(kPa kPa kPa
	How long was the 200% of rate Was there any discharge from			-	ential pres	sure? O Yes	O No
	What was the maximum press and descending)?		d at flows from (–	. ,		w (both as	
	Was there any damage or perr			•		e assemb O Yes	ly? O No
	Was the assembly on test in co	omplete compliar	ice with the crite	eria of Se	ction 3.6?	Oyes	ONG
3.7	Bypass Flow Detection When V2 was opened and the Was a measuring tank used? If yes, record the flow:	flow regulated, re	ecord the flow o	n flow m	eter 1.	O Yes	Ома
	Regulated flow rate (GPM)	Flow rate –	flow meter 1	Flow r	ate – usin	g measur	ing tank
	as indicated on water meter	GPM	L/s	G	PM	L/	s
	0.5						
	1.0			<u> </u>			
	1.5						
	2.0						

2.5





_			
	3.0	 	
ĺ	3.5	 	
ĺ	4.0	 	
ĺ	4.5	 	
ĺ	5.0	 	

	At what GPM (L/s) did the reading on the flow meter/collection tank exceed the reading on the meter in the bypass line? GPM (L/s
	Did the water meter or alarm device indicate flow at or before 2.0 GPM (0.13 L/s)? O Yes O No O Questionable
	If questionable, explain:
3.8	Relief Valve Opening Test Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3? O Yes N If no, explain:
	The test system was pressurized to psi (kPa
	When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? psi (kPa
	When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? psi (kPa

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		
130	896.4		
140	965.3		
150	1034.3		
160	1103.2		
170	1172.2		





	180	1241.2			7		
	190	1310.1			1		
	200	1379.1			1		
		•		valve, were all rea		8.8 kPa) or greater? O Yes O Yes	O No O No
						_	_
	Was the as	ssembly on te	est in complete	compliance with t	he criteria of Sec	tion 3.8? O Yes	O No
3.9			tial Pressure R essure used for	elief Valve Test this test?		psi (kPa)
					and closing test	cock: #4	
3.10		ness of Firs the static pre		al across the first	check for the follo	owing line pressures	:
	psi	(kPa)	psid	kPa]		
	20	137.9					
	30	206.9					
	40	275.8					
	50	344.8]		
	60	413.7			1		
	70	482.7			1		
	80	551.6			1		
	90	620.6			1		
	100	689.5			7		
	110	758.5			7		
	120	827.4			1		
	130	896.4			7		
	140	965.3			1		
	150	1034.3			7		
	160	1103.2			1		
	170	1172.2			1		
	180	1241.2			1		
	190	1310.1			1		
	200	1379.1]		
		ne inlet line p				the pressure difference relief valve as detection Yes	
3.11			Second Check It of water in the		st cock #3:	inches (mm)
	Indicate the	e initial heigh	t of water in the	sight glass at te	st cock #4:	inches (mm)





	and #4?	ight glasses at test cocks inches (
3.12	Drip Tightness of Bypass Check (For RPDA-II Assemblies) Was the assembly installed per Figure 1 with a sight glass installed in bypass line?	test cocks #2 and #3 in O Yes	the O No
	Indicate the height of water in the sight glass at test cock #2:	inches (mm)
	When no further fall of water is observed in the sight at test cock #2, i in the water levels between sight glasses at test cock #2 and #3:		mm)
3.13	Relief Valve Discharge Test with Atmospheric Supply Pressure What was the rated flow (per Table 3) through the relief valve for the s GPM	size of the device on test	?
		in-H2O (m	
	Was the moving member of second check valve removed? If no, explain:	O Yes	
	What was the recorded discharge flow rate from the relief valve?	GPM (L/s)
3.14	Relief Valve Discharge With Positive Supply Pressure What was the rated flow (per Table 3) through the relief valve for the s	size of the device on test	
	What was the supply pressure?	psi (kPa)
	What was the intermediate chamber pressure?	psi (kPa)
	What was the recorded discharge flow rate from the relief valve?	GPM (L/s)
3.15	Backpressure/Backsiphonage Test Attach test results from USC Protocol for backpressure/backsiphonag Was there any indication of damage or permanent deformation to the		O No
	Was there any evidence of water being drawn into the upstream trans		O No
3.16	Air Gap Device Backsiphonage Test (Only applies to Assemblies supplied with an Air Gap device) What was the vacuum applied to the inlet of the device?	inches of Hg mm of Hg Va	Vaccum
	Measure and record the quantity of water that is carried over from the port(s):	air gap into the relief dis	
	Was there any evidence of water in the air gap device carrying the ov port(s)?	er into the relief valve dis	charge O No





3.17	What type of	of device is one of the same o	n test, RPDA or loted by the man	RPDA-II? ufacturer:	ture and Pressure			
		°F to	°F	(_ °C to	_°C)		
	Maximum ra	ated pressure	e as noted in Sec	ction 1.2.3:		_ psi	(kPa)
	at a flow rat Start date a	e of: nd time	ne assembly at:	_		°F _ psi GPM	·	°C) kPa) L/s)
Retest Sec	RPDA-II Ass tion 3.8 Was the ass	semblies):	led per Figure 1		d to Sections 3.8, 3			`
	If no, explai	n:						
	The test sys	stem was pre	ssurized to			_ psi	(kPa)
	the first drop When the a	p of water co ssembly was	me out of the rel	ief valve? atic condition aft	g differential pressu ———————————————————————————————————	_ psi of wate ck?	r was flowe	kPa) ed
	-	•		·		_ psi	(kPa)
	Repeat the	test and reco	ord the above da	ta when using su	upply pressures of:			
	psi	(kPa)	psid	kPa]			
	20	137.9						
	30	206.9						
	1	1			1			

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		
130	896.4		
140	965.3		
150	1034.3		
160	1103.2		





170	1172.2	
180	1241.2	
190	1310.1	
200	1379.1	

	At the time of the opening of the relief valve, were a	all readings 2.0 psi (13.8 kPa) o	or greater?	O No
	Did the relief valve close drip tight at each pressure		O Yes	O No
	Was the assembly on test in complete compliance v		Oyes	ONo
Retest Sec	etion 3.10			
	What was the static pressure differential across the	first check for the following line	e pressures:	

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		
130	896.4		
140	965.3		
150	1034.3		
160	1103.2		
170	1172.2		
180	1241.2		
190	1310.1		
200	1379.1		

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.8?

Indicate the initial height of water in the sight glass at test cock #3:	inches (n	nm)
Indicate the initial height of water in the sight glass at test cock #4:	inches (n	nm)
What was the final height difference in the water levels between the sight and #4?		nm)





Retest Sec	Was the assembly installed per Figure 1 with a sight glass installed in test bypass line?	t cocks #	2 and #3 ir O Yes	n the O No
	Indicate the height of water in the sight glass at test cock #2:	iı	nches (mm)
	When no further fall of water is observed in the sight at test cock #2, indicin the water levels between sight glasses at test cock #2 and #3:			mm)
3.17 contin	Upon completion of the 100 hours and the retesting of Sections 3.8, 3.10, ———— °F (°C) was circulated through the			at:
	Once the assembly reaches ambient temperature, the assembly shall be 3.5 , for RPDA-II only perform 3.4 .	retested	to Sections	s 3.2 and
Retest Sec	tion 3.2			
	The assembly was pressurized to:	psi	(kPa)
	The test period was for: minutes Were there any leaks or indications of damage to the assembly? O Yes If questionable, explain:	O No	O Que	estionable
Retest Sec	tion 3.5			
	Was the relief valve held closed or isolated?		O Yes	O No
	What was the pressure applied through test cock #3?	psi	(kPa)
	How long was the pressure held? minutes Was there any evidence of leakage at sight glass #2?		Oyes	O No
	What was the pressure applied through test cock #4? How long was the pressure held? minutes	psi	(kPa)
	Was there any evidence of leakage at sight glass #3?		Oyes	O No
Retest Sec	tion 3.4			
7101001 000	Hydrostatic Backpressure Test of Bypass Check (For RPDA-II only)			
	(for assemblies with a bypass check around the 2nd check only)		,	
	The bypass check was pressurized to: The test period was for minutes	psi	(kPa)
	Were there any leaks or indications of damage to the bypass check?	O No	O Que	estionable
	If questionable, explain:			
3.17 contir	nued			
	Upon completion of testing at ambient water temperature,			
	water at: was circulated through the assembly for: hours	°F	(°C)
	and then the assembly was retested to Sections 3.8, 3.10, 3.11 and 3.12:			
Retest Sec	tion 3.8			
. 101001 000	Was the assembly installed per Figure 1 with a bypass line with a needle	valve an	d differenti	al gauge
	between test cock #2 and #3?		O Yes	ONo
	If no, explain: The test system was pressured to	psi		kPa)
	The took by stell was pressured to	pai	١	ni a)





	e needle valve valve valve value v			ng differential pre 	ssure, at what pressu psi (
					nt of water was flowe	ed
through t	the assembly, w	hat was the dif	ferential pressure	e across the first o	check? psi (kPa)
						u)
		1		supply pressures	of:	
psi	(kPa)	psid	kPa	4		
20	137.9					
30	206.9			_		
40	275.8			_		
50	344.8					
60	413.7			_		
70	482.7			<u>. </u>		
80	551.6			<u>. </u>		
90	620.6					
100	689.5			_		
110	758.5					
120	827.4			<u>. </u>		
130	896.4					
140	965.3			<u>. </u>		
150	1034.3					
160	1103.2					
170	1172.2		_			
180	1241.2					
190	1310.1			.]		
200	1379.1					
At the tin	ne of the openir	ng of the relief v	/alve, were all re	adings 2.0 psi (13	3.8 kPa) or greater?	
D: 1 (1				10	O Yes	O No
Did the r	elief valve close	e drip tight at ea	ach pressure seg	ment?	O Yes	O No
Was the	assembly on te	st in complete	compliance with	the criteria of Sec	tion 3.8?	
	,				O Yes	O No
-4.04: 0.43						
est Section 3.10 What wa	s the static nred	ssure differenti	al across the firet	check for the follo	owing line pressures:	
psi	(kPa)	psid	kPa		owing line pressures.	
20	137.9	psiu	, KFa	┨		
30	206.9		 	-		
40	_			-		
	275.8		<u> </u>			
50	344.8			-		
60	413.7	I	I	1		

70

482.7





80	551.6	
90	620.6	
100	689.5	
110	758.5	
120	827.4	
130	896.4	
140	965.3	
150	1034.3	
160	1103.2	
170	1172.2	
180	1241.2	
190	1310.1	
200	1379.1	

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.8?

O Yes

No

Retest Sec	tion 3.11 Indicate the initial height of water in the sight glass at test cock #3:	inches (mm)
	Indicate the initial height of water in the sight glass at test cock #4:	_ inches (mm)
	What was the final height difference in the water levels between the sight glass and #4?	es at test cocks inches(
Retest Sec	tion 3.12 Was the assembly installed per Figure 1 with a sight glass installed in test cock bypass line?	s #2 and #3 in the	he O No
	Indicate the height of water in the sight glass at test cock #2:	_ inches (mm)
	When no further fall of water is observed in the sight at test cock #2, indicate the in the water levels between sight glasses at test cock #2 and #3:	ne difference inches (mm)
3.17 contir	nued Was the assembly on test in complete compliance with the criteria of Section 3	.18? O Yes	ONo
3.18		PM (psi (nds	L/s) kPa)
	(2) What was the static pressure? The test period was forsecon	psi (nds	kPa)
	(3) The pressure was decreased to: The test period was for secon	psi (nds	kPa)





	(4) Backpressure was increased to: The test period was for	ps second	'		_kPa)
	(5) Remove backpressure What was the supply pressure?	ps	si (_kPa)
	(6) Return to atmopheric pressure:	ps	si (_kPa)
	(7) Steps (1) through (5) were repeated forcycles.				
	(8) Retest assembly to Sections 3.8, 3.10, 3.11 and 3.12.				
Retest Sec	tion 3.8 Was the assembly installed per Figure 1 with a bypass line wit between test cock #2 and #3? If no, explain:				auge O No
	The test system was pressured to	ps	si (_kPa)
	When the needle valve was opened to show a decreasing different the first drop of water come out of the relief valve?	erential pressure, a ps		at pressure	
	When the assembly was returned to a static condition after a sthrough the assembly, what was the differential pressure across		iter v	vas flowed	
	-	ps	si (_kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		
130	896.4		
140	965.3		
150	1034.3		
160	1103.2		
170	1172.2		
180	1241.2		
190	1310.1		
200	1379.1		





					adings 2.0 psi (13.8 kF	O Yes	O No
	Did the rel	ief valve close	drip tight at each	n pressure segr	ment?	O Yes	O No
	Was the a	ssembly on tes	t in complete co	mpliance with t	he criteria of Section 3	3.8? O Yes	O No
Retest Se		the static press	sure differential a	across the first	check for the following	g line pressures	:
	psi	(kPa)	psid	kPa]		
	20	137.9			1		
	30	206.9			1		
	40	275.8			1		
	50	344.8			1		
	60	413.7			1		
	70	482.7			1		
	80	551.6			1		
	90	620.6			1		
	100	689.5]		
	110	758.5]		
	120	827.4			1		
	130	896.4			1		
	140	965.3]		
	150	1034.3]		
	160	1103.2			1		
	170	1172.2					
	180	1241.2					
	190	1310.1					
	200	1379.1					
		inlet line pressi			Pa) greater than the puried to open the relief		
Retest Se		e initial height	of water in the si	ght glass at tes	st cock #3:	inches (mm)
	Indicate th	e initial height	of water in the si	ght glass at tes	st cock #4:	inches (mm)
	What was and #4?	the final height	difference in the	e water levels b	petween the sight glas	ses at test cock inches(
Retest Se	Was the a	•	ed per Figure 1 v	with a sight gla	ss installed in test cod	\sim	\sim
	bypass line	e?				O Yes	O No





	Indicate th	e height of wa	ater in the sight	glass at test cock #2	<u></u>	inches (mm)
					cock #2, indicate the		mm)
3.18 conti	inued						
	What what what w	vater at 50% ovas the flow rows the supplest period was	y pressure?	(see Table 1).		M (si (ds	
		vas the static st period was	•		p	si (ds	kPa)
		essure was d st period was			p	si (ds	kPa)
	•	ressure was i st period was			p second	si (ds	kPa)
		ve backpressovas the suppl			p	si (kPa)
	Steps	(1) through (5) were repeated	d forcycle	s.		
	(10)Retest	assembly to	Sections 3.8, 3.	10, 3.11 and 3.12.			
Retest Se	Was the as	est cock #2 ar	nd #3?		with a needle valve a	and differentia O Yes	al gauge O No
	The test sy	stem was pre	essured to		p	si (kPa)
	the first dro	op of water co	me out of the re returned to a s	elief valve?	ifferential pressure, a p a small amount of ware	si (kPa)
	unough un	o assembly, w	mat was the diff	crential pressure ac		si (kPa)
	Repeat the	test and reco	ord the above d	ata when using supp	oly pressures of:		
	psi	(kPa)	psid	kPa			
	20	137.9					
	30	206.9					
	40	275.8					
	50	344.8					
	60	413.7					
	70	482.7					





80	551.6	
90	620.6	
100	689.5	
110	758.5	
120	827.4	
130	896.4	
140	965.3	
150	1034.3	
160	1103.2	
170	1172.2	
180	1241.2	
190	1310.1	
200	1379.1	

At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) o	r greater?	_
Did the relief valve close drip tight at each pressure segment?		O No O No
Was the assembly on test in complete compliance with the criteria of Section 3.8?	Oyes	O No

Retest Section 3.10

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		
130	896.4		
140	965.3		
150	1034.3		
160	1103.2		
170	1172.2		
180	1241.2		
190	1310.1		
200	1379.1		





	between the inlet line pressure and the zone pressure required to open the relief in Section 3.8?		
Retest Sec	tion 3.11 Indicate the initial height of water in the sight glass at test cock #3:	inches (mm)
	Indicate the initial height of water in the sight glass at test cock #4:	inches (mm)
	What was the final height difference in the water levels between the sight glasse and #4?	s at test cocks inches(
Retest Sec	tion 3.12 Was the assembly installed per Figure 1 with a sight glass installed in test cocks bypass line?	#2 and #3 in the O Yes	he O No
	Indicate the height of water in the sight glass at test cock #2:	inches (mm)
	When no further fall of water is observed in the sight at test cock #2, indicate the in the water levels between sight glasses at test cock #2 and #3:		mm)
3.18 contin	nued		
	Second Check Valve drip Evaluation (11) With the relief valve open to atmosphere, a back pressure of: ps was applied for: minute	,	kPa)
	Was there dripping from the vent?	O Yes	O No
	(12) With the relief valve open to atmosphere, a back pressure of: per was applied for: minute		kPa)
	Was there dripping from the vent?	O Yes	O No
	(13) The pressure at the inlet was raised to: ps for: minute	si (s	kPa)
	(14) The pressure at the inlet was raised to: for: minute	si (es	kPa)
	(15) Flow water at 75% of the rated flow (See Table 1). What was the flow rate? What was the supply pressure? The test period was for GP! second	si (L/s) kPa)
	What was the static pressure?ps The test period was forsecond	si (ls	kPa)
	The pressure was decreased to:p: The test period was forsecond	si (Is	kPa)
	Backpressure was increased to: ps The test period was forsecond	si (Is	kPa)





kPa	(psi		pressure?	ove backpressu t was the supply	
			orcycles.	were repeated	s (1) through (5)	Steps
			•	•		•
			0, 3.11 and 3.12	Sections 3.8, 3.1	st assembly to S	(16) Retes
ential dauge	l differe	a needle valve and	with a bypass line with a n	ed per Figure 1	assembly install	test Section 3.8 Was the a
	O Yes		Mar a bypaco into war a n		test cock #2 an	
					lain:	If no, expl
kPa	(psi		ssured to	system was pre	The test s
ressure did	what pr	ential pressure, at v	ow a decreasing different	as opened to sh	e needle valve v	When the
		psi		me out of the reli		
flowed	r wae fl	all amount of water	atic condition after a small	returned to a str	a accombly was	When the
lowed	ı was ıı		rential pressure across the			
kPa	(psi			3,	3
					as toot and room	Dancet th
		occuroo of:	a whan using aupply prop	rd the above det		
		essures of:	a when using supply pres			
		essures of:	a when using supply pres	rd the above dat	(kPa)	psi
		essures of:			(kPa) 137.9	psi 20
		essures of:			(kPa) 137.9 206.9	psi 20 30
		essures of:			(kPa) 137.9 206.9 275.8	20 30 40
		essures of:			(kPa) 137.9 206.9 275.8 344.8	9si 20 30 40 50
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7	9si 20 30 40 50
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7	psi 20 30 40 50 60 70
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7	9si 20 30 40 50
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6	psi 20 30 40 50 60 70 80
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6	psi 20 30 40 50 60 70 80 90
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5	psi 20 30 40 50 60 70 80 90 100
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5 758.5	psi 20 30 40 50 60 70 80 90 100 110
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5 758.5 827.4	psi 20 30 40 50 60 70 80 90 100 110 120
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5 758.5 827.4 896.4	psi 20 30 40 50 60 70 80 90 100 110 120 130
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5 758.5 827.4 896.4 965.3	psi 20 30 40 50 60 70 80 90 100 110 120 130 140
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5 758.5 827.4 896.4 965.3 1034.3	psi 20 30 40 50 60 70 80 90 100 110 120 130 140 150
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5 758.5 827.4 896.4 965.3 1034.3 1103.2	psi 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
		essures of:			(kPa) 137.9 206.9 275.8 344.8 413.7 482.7 551.6 620.6 689.5 758.5 827.4 896.4 965.3 1034.3 1103.2 1172.2	psi 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170





Was the assembly on test in complete compliance with the criteria of Section 3.8?

-	
\sim	\sim
/ 1	/)
O Yes	O No
() YES	() (()

Retest Section 3.10

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		
130	896.4		
140	965.3		
150	1034.3		
160	1103.2		
170	1172.2		
180	1241.2		
190	1310.1		
200	1379.1		

between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.8? Retest Section 3.11 Indicate the initial height of water in the sight glass at test cock #3: inches (mm) Indicate the initial height of water in the sight glass at test cock #4:_____ inches (_____ mm) What was the final height difference in the water levels between the sight glasses at test cocks #3 ____ inches (____ mm) and #4? Retest Section 3.12 Was the assembly installed per Figure 1 with a sight glass installed in test cocks #2 and #3 in the O Yes bypass line? Indicate the height of water in the sight glass at test cock #2: inches (mm) When no further fall of water is observed in the sight at test cock #2, indicate the difference in the water levels between sight glasses at test cock #2 and #3: inches (mm)

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential





3.18 continued

What wa	ater at 100% as the flow ra as the supply period was	/ pressure?	(See Table 1).	G	SPM psi nds	(L/s) kPa)
	as the static period was			seco	psi nds	(kPa)
	ssure was de period was	ecreased to: for		seco	psi nds	(kPa)
•	essure was ir period was			seco	psi nds	(kPa)
	e backpressu as the supply				psi	(kPa)
Steps (1) through (5) were repeated	forcy	cles.			
(18) Retest a	ssembly to	Sections 3.8, 3.1	0, 3.11, 3.12				
	t cock #2 an	d #3?	with a bypass lir	ne with a needle valvo	e and	d differen O Yes	tial gauge O No
The test sys					psi	(kPa)
		vas opened to sl me out of the rel		g differential pressure ————————————————————————————————————			ssure did kPa)
	•			er a small amount of across the first check	< ?		
					psi	(kPa)
				ipply pressures of:			
psi	(kPa)	psid	kPa				

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		





130	896.4	
140	965.3	
150	1034.3	
160	1103.2	
170	1172.2	
180	1241.2	
190	1310.1	
200	1379.1	

At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) o	r greater? O Yes	O No
Did the relief valve close drip tight at each pressure segment?		O No
Was the assembly on test in complete compliance with the criteria of Section 3.8?	Oyes	O No

Retest Section 3.10

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psid	kPa
20	137.9		
30	206.9		
40	275.8		
50	344.8		
60	413.7		
70	482.7		
80	551.6		
90	620.6		
100	689.5		
110	758.5		
120	827.4		
130	896.4		
140	965.3		
150	1034.3		
160	1103.2		
170	1172.2		
180	1241.2		
190	1310.1		
200	1379.1		

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.8?

O Yes

No





Retest Sec	tion 3.11 Indicate the initial height of water in the sight glass at test cock #3:	_ inches (_ mm)
	Indicate the initial height of water in the sight glass at test cock #4:	_ inches (_ mm)
	What was the final height difference in the water levels between the sight glasse and #4?	es at test cocks _ inches(
Retest Sec	tion 3.12 Was the assembly installed per Figure 1 with a sight glass installed in test cocks bypass line?	s #2 and #3 in th O Yes	ne O No
	Indicate the height of water in the sight glass at test cock #2:	_ inches (_ mm)
	When no further fall of water is observed in the sight at test cock #2, indicate the in the water levels between sight glasses at test cock #2 and #3:		_ mm)
3.18 conti	nued		
	Was the USC FCCC & HR Life Cycle test protocol used for the cycle test? If yes, attach the test results.	O Yes	ONo
	Was the assembly on test in complete compliance with the criteria of Section 3.7	18? O Yes	O No
3.19	Body Strength Test What was the pressure used for this test?p The pressure was held forminute	si (
	Was there any structural failure that would cause leakage? O Yes O No If questionable, explain:	O Questi	onable
3.20	Seat Adhesion Test Did the adhesion test meet all of the requirements of Section 18 of the UL Stand O Yes No If questionable, explain:	lard 312? O Questi	onable
	Attach those test results.		
3.21	High Velocity Test What was the flow velocity used for this test? ft/se This velocity was maintained for minute	· ————	m/sec)
	Was there any damage or permanent deformation to any of the internal component assembly? Did any portion of the assembly become dislodged or restrict flow during this vertex.	O Yes locity test?	O No
	Was the assembly (or assemblies) used for testing of Sections 3.1 through 3.22 ance with the criteria of this standard?	O Yes in complete con O Yes	O No mpli- O No
	and mar an ontone of the standard;	<u> </u>	- 110





SECTION IV

4.0	Detai	led	Res	ults

4.1	Materials Did the manufacturer provide evidence that the materials make-up of the device has been used successfully in similar applications for at least one (1) year? O Yes O No
4.1.1	Materials in Contact with Water Did any solder and fluxes in contact with the potable water supply exceed 0.2% lead content? O Yes O No O Questionable
	If questionable, explain:
4.1.2	Elastomers and Polymers Did all of the elastomers and polymers in contact with the water comply with the requirements of the U.S. Code of Federal Regulations (CFR) Title 21, Section 177?
	O Yes O No O Questionable
4.1.3	Did all ferrous cast parts conform to ASTM A126 for gray iron or ASTM A536 Grade 65-45-12 for ductile iron? O Yes O No O Questionable of the property of th
4.1.4	Were all ferrous cast parts in contact with the water flowing through the assembly protected against corrosion by epoxy coating or other equivalent methods? O Yes O No O Questionable If questionable, explain:
4.1.5	Were all stainless steel components in contact with water of Series 300 s/s? O Yes O Questionable
4.4.0	If questionable, explain:
4.1.6	Were all non-ferrous wetted parts of a corrosion resistance of at least equal to an alloy of 79% copper? O Yes No Questionable If questionable, explain:
4.1.7	Were all internal non-cast parts of a corrosion resistance of at least equal to an alloy of 79% copper? O Yes O No O Questionable
	If questionable, explain:
4.1.8	Were all springs in contact with the water flowing through the assembly of a corrosion resistance of at least equal to stainless steel series 300? O Yes No Questionable of a corrosion resistance of at least equal to stainless steel series 300?
4.1.9	Were all flexible non-metallic parts of a design to withstand all the criteria of this standard without change in their physical characteristics? O Yes O No O Questionable If questionable, explain:
4.1.10	Were check or relief valve seats of a metal to metal seating? O Yes O No O Questionable If questionable, explain:
	Identify seating material: #1 Check: #2 Check: Relief Valve:





4.1.11	Were the seat rings of a corrosion resistance of at least equal to an alloy of 79% copper?
	If questionable, explain:
4.1.12	Were the test cocks of a corrosion resistance of at least equal to an alloy of 79% copper. O Yes O No O Questionable
	If questionable, explain:
4.1.13	Do all pipe flanges conform to ASME B16.24 for bronze flanges and ASTM A126 for cast iron flanges? O Yes O No O Questionable flanges and ASTM A126 for cast iron
4.1.14	Do all pipe threads conform to ASME B1.20.1 for taper pipe threads and ASME B1.20.3 for dryseal? O Yes O No O Questionable If questionable, explain:
4.1.15	Do inlet and outlet grooved connections comply with AWWA C606? O Yes O No O Questionable
	If questionable, explain:
4.2 4.2.1	Marking Instructions Marking of Devices Identify and list the markings found on the test assembly: (a) Manufacturer's name or trademark: (b) Type (RPDA or RPDA-II): (c) Model number of the assembly: (d) Model number of the bypass check or bypass assembly: (e) Maximum working pressure: (f) Maximum working temperature: (g) Serial number consistent with the manufacturer's standard practice: (h) Nominal valve size: (i) The direction of water flow: (j) Each shut-off valve shall be marked with the manufacturer's name or trademark and model number:
	Was marking of the RPDA Bypass Assembly per ASSE 1013? O Yes O No
4.2.2	Marking of RPDA Bypass Assembly Identify and list the markings found on the RPDA-II Bypass check: (a) Name of manufacturer or trademark: (b) Model designation of assembly: (c) Maximum working pressure: (d) Maximum working temperature: (e) Serial number consistent with the manufacturer's standard practice: (f) Nominal valve size: (g) The direction of water flow: (h) Each shut-off valve shall be marked with the manufacturer's name or trademark and model number:
4.2.3	Marking of RPDA-II Bypass Check Valve (a) Name of manufacturer or trademark: (b) Model designation of the assembly:





	(c) Serial number consistent with the manufacturer's standard practice:(d) Nominal size:(a) The direction of water flow:				
	(e) The direction of water flow:(f) Each shut-off valve shall be marked with the manufacturer				
	number:				
4.2.4	Describe how these markings were made:				
4.3 4.3.1	Installation and Maintenance Instructions Were instructions for installation submitted with the device?	Oyes	O No	O Questionable	
	If questionable, explain:				
4.3.2	Did the installation instructions indicate the tested and approassembly? If questionable, explain:	O Yes	O No	O Questionable	
4.3.3	Was the assembly capable of being maintained or repaired	while in-line	e? O No	O Questionable	
	If questionable, explain:				
4.3.4	Were field testing instructions furnished? If questionable, explain:	O Yes	O No	O Questionable	
4.3.5	Are Tools required to perform field service of the assembly s	shall be rea		rcially available? O Questionable	
	If questionable, explain:	O 103	O 110	C Questionable	



LISTED LABORATORY:
ADDRESS:
PHONE:
FAX
TEST ENGINEER(S):
If applicable:
OUTSOURCED LABORATORY:
ADDRESS:
PHONE:
FAX:
TEST ENGINEER(S):
Scope of outsourced testing:
We certify that the evaluations are based on our best judgments and that the test data recorded is an accurate record of the performance of the device on test.
Signature of the official of the listed laboratory: Signature
Title of the official:Date: