

REGISTRATION OF A PRESSURE FITTING DESIGN

08-Jun-21

TSSA
345 Carlingview Drive
Toronto, Ontario
M9W 6N9**Attention: Cecylia Garbacz****File Number: 12062 [0 F]****Re: Manufacturer: Detroit Flex Defense**
Item: Hose Assemblies
Catalog or Drawing: Per Scope of Registration (18-Feb-21)

TSASK Codes and Standards Compliance has registered the design listed above in accordance with The Boiler and Pressure Vessel Act and Regulations and CSA B51. The Canadian Registration Number (CRN) is:

OD22733.53 Expiry Date: October 9, 2030

Please note that every fitting shall be constructed in strict accordance with the registered design.

Fitting registrations are required to be resubmitted for validation after ten (10) years from the registration date in accordance with CSA B51, Clause 4.2.1.

Should you require anything further, please do not hesitate to contact the Codes and Standards Compliance Office at your convenience.

Yours truly,

Athan Syrgiannis, P.Eng.
Codes and Standards Compliance**Remarks:**

A valid quality control program must be maintained at the production facility for the fitting registration to remain valid until the expiry date.

This registration includes the current scope of registration as well as the original registered design which was not previously registered in Saskatchewan.

Statutory Declaration (Registration of Fittings)

TSK-1008

I. Declaration Information

I, BRYAN M. MOOSEKIAN,

CHIEF OF OPERATIONS

(company title, e.g. vice president, plant manager, chief engineer)
(must be in a position of authority in the manufacturing plant where the fitting is produced)

of: DETROIT FLEX DEFENSE
(name of manufacturer)

In this space, show facsimile of manufacturer's logo or trademark as it will appear on the fitting.



located at: 2921 INDUSTRIAL ROW TROY, MI 48084
(Plant Address - Apt/Street) (City, Prov) (Postal Code)

do solemnly declare that the fittings listed hereinunder, which are subject to the **Saskatchewan Boiler and Pressure Vessel Safety Act** (check one)

- ☒ Comply with the requirements of ASME B31.3 which specifies the dimensions,
(title of recognized North American Standard)
Materials of construction, pressure / temperature ratings and identification marking of the fittings, or
- ☐ Are not covered by the provisions of a recognized North American standard and are therefore manufactured to comply with _____ as supported by the attached data which identifies the dimensions, materials of construction, pressure / temperature ratings and the basis for such ratings, and the marking of the fittings for identification.

I further declare that the manufacturer of these fittings is controlled by a quality control program which has been verified by the following authority, ASR ISO 9001 as being suitable for the manufacturer of these fittings to the stated standard. The fittings covered by this declaration, for which I seek registration, are CATEGORY D

In support of this application, the following information, calculations and / or test data are attached:

SCOPE OF CRN REGISTRATION, DRAWINGS, CALCULATIONS

II. Declaration

DECLARED before me at Troy In the State of Michigan
this 26th day of February, 2020

BRYAN MOOSEKIAN CARI M POWELL
(print name) (Signature) Notary Public, State of Michigan
Cari M Powell County Of Oakland
(Signature of Commissioner of Oaths) My Commission Expires 8-11-2021
Acting in the County of OAKLAND

III. Office Use Only

To the best of my knowledge and belief, the application meets the requirements of the **Boiler and Pressure Vessel Safety Act** and CSA B51, Clause 4.2, and is accepted for registration in Category _____



Registration No. OD22733.53
File No. 12062
Registered
Date: June 8, 2021
Expiry Date: October 9, 2030

Codes & Standards Compliance Office

(Date Registered - MM DD YYYY)
(For the Administrator / Chief Inspector)

(Expiry Date - MM DD YYYY)

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 Technical Safety Authority of Saskatchewan	
Registration No.	OD22733.53
File No.	12062
	<input type="button" value="Registered"/>
Date:	June 8, 2021
Expiry Date:	October 9, 2030
Codes & Standards Compliance Office	

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SCOPE OF CRN REGISTRATION

PRODUCT DESCRIPTION			
Design Report:	R-1232A		
Product Description	Process Connections	Design Code	Material Specification (Note 2)
H9011, H9011NC H9016, H9016HY, H9016SP, H9016TP Hose Assemblies	Size 04: 7/16-20 thread Size 05: 1/2-20 thread Size 06: 9/16-18 thread Size 08: 3/4-16 thread Size 12: 1-1/16"-12 thread Size 04: 0.250" Tube OD Size 05: 0.313" Tube OD Size 06: 0.375" Tube OD Size 08: 0.500" Tube OD Size 12: 0.750" Tube OD Straight, 45 Degree and 90 Degree end fittings	ARPM IP-2 Ninth Edition; 2015, ASME B31.3, 2018	Braid: Type 304 Stainless Steel (Tensile 270,000 psi min, 300,000 psi max.) Collar, Fitting, Nuts: ASTM A479-304 / AMS 5639 ASTM A479-304L / AMS 5647 ASTM A182-304 / AMS 5639 ASTM A182-304L / AMS 5647 Retention Pin: ASTM A580-302 / AMS 5637, ASTM A580-305
PRODUCT DESCRIPTION			
Hose Size	Group 1 Service MAWP AT 400°F (Note 1)	Group 2 Service MAWP AT 400°F (Note 1)	Group 3 Service MAWP AT 400°F (Note 1)
04	2600 psig	2080 psig	1040 psig
05	2000 psig	1600 psig	800 psig
06	1700 psig	1360 psig	680 psig
08	1600 psig	1280 psig	640 psig
12	1000 psig	800 psig	400 psig

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SCOPE OF CRN REGISTRATION

PRODUCT DESCRIPTION			
Design Report:	R-1232B		
Product Description	Process Connections	Design Code	Material Specification (Note 2)
H9012, H9012HS H9013, H9013HS Hose Assemblies	Size 04: 7/16-20 thread Size 06: 9/16-18 thread Size 08: 3/4-16 thread Size 12: 1-1/16"-12 thread Size 04: 0.250" Tube OD Size 06: 0.375" Tube OD Size 08: 0.500" Tube OD Size 12: 0.750" Tube OD Straight, 45 Degree and 90 Degree end fittings	ARPM IP-2 Ninth Edition; 2015, ASME B31.3, 2018	Braid: Type 304 Stainless Steel (Tensile 270,000 psi min, 300,000 psi max.) Collar, Fitting, Nuts: ASTM A479-304 / AMS 5639 ASTM A479-304L / AMS 5647 ASTM A182-304 / AMS 5639 ASTM A182-304L / AMS 5647 Retention Pin: ASTM A580-302 / AMS 5637, ASTM A580-305
PRODUCT DESCRIPTION			
Hose Size	Group 1 Service MAWP AT 400°F (Note 1)	Group 2 Service MAWP AT 400°F (Note 1)	Group 3 Service MAWP AT 400°F (Note 1)
04	2600 psig	2080 psig	1040 psig
06	1700 psig	1360 psig	680 psig
08	1700 psig	1360 psig	680 psig
12	1000 psig	800 psig	400 psig

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SCOPE OF CRN REGISTRATION

PRODUCT DESCRIPTION			
Design Report:	R-1232C		
Product Description	Process Connections	Design Code	Material Specification (Note 2)
H9037, H9038 Hose Assemblies	Size 04: 7/16-20 thread Size 06: 9/16-18 thread Straight, 45 Degree and 90 Degree end fittings	ARPM IP-2 Ninth Edition; 2015, ASME B31.3, 2018	Braid: Type 304 Stainless Steel (Tensile 1900 N/MM ² min, 2150 N/MM ² max.) Collar, Fitting, Nuts: ASTM A479-304 / AMS 5639 ASTM A479-304L / AMS 5647 ASTM A182-304 / AMS 5639 ASTM A182-304L / AMS 5647 Retention Pin: ASTM A580-302 / AMS 5637, ASTM A580-305
PRODUCT DESCRIPTION			
Hose Size	Group 1 Service MAWP AT 450°F (Note 1)	Group 2 Service MAWP AT 450°F (Note 1)	Group 3 Service MAWP AT 450°F (Note 1)
04	1280 psig	1024 psig	512 psig
06	1160 psig	928 psig	464 psig

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PRODUCT DESCRIPTION			
Design Report:	R-1232C		
Product Description	Process Connections	Design Code	Material Specification (Note 2)
H9037, H9038 Hose Assemblies	Size 08: 3/4-16 thread Size 12: 1-1/16"-12 thread Size 16: 1-5/16"-12 thread Straight, 45 Degree and 90 Degree end fittings	ARPM IP-2 Ninth Edition; 2015, ASME B31.3, 2018	Braid: Type 304 Stainless Steel (Tensile 1800 N/MM ² min, 2050 N/MM ² max.) Collar, Fitting, Nuts: ASTM A479-304 / AMS 5639 ASTM A479-304L / AMS 5647 ASTM A182-304 / AMS 5639 ASTM A182-304L / AMS 5647 Retention Pin: ASTM A580-302 / AMS 5637, ASTM A580-305
PRODUCT DESCRIPTION			
Hose Size	Group 1 Service MAWP AT 450°F (Note 1)	Group 2 Service MAWP AT 450°F (Note 1)	Group 3 Service MAWP AT 450°F (Note 1)
08	870 psig	696 psig	348 psig
12	610 psig	488 psig	244 psig
16	540 psig	432 psig	216 psig

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SCOPE OF CRN REGISTRATION

PRODUCT DESCRIPTION			
Design Report:	R-1232D		
Product Description	Process Connections	Design Code	Material Specification (Note 2)
H9011, H9011NC H9016, H9016HY, H9016SP, H9016TP H9012, H9012HS H9013, H9013HS Hose Assemblies	Size 06 x 1/2" Type A ASME BPE Ferrule, Size 08 x 3/4" Type A ASME BPE Ferrule, Size 08 x 1" Type B ASME BPE Ferrule, Size 12 x 1" Type B ASME BPE Ferrule. (Note 4)	ARPM IP-2 Ninth Edition; 2015, ASME B31.3, 2018	Braid: Type 304 Stainless Steel (Tensile 270,000 psi min, 300,000 psi max.) Collar, Fitting, Nuts, Ferrules: ASTM A479-304 / AMS 5639 ASTM A479-304L / AMS 5647 ASTM A182-304 / AMS 5639 ASTM A182-304L / AMS 5647 Retention Pin: ASTM A580-302 / AMS 5637, ASTM A580-305
PRODUCT DESCRIPTION			
Hose Size	Group 1 Service MAWP AT 302°F (Note 1)	Group 2 Service MAWP AT 302°F (Note 1)	Group 3 Service MAWP AT 302°F (Note 1)
Size 06 x 1/2" Type A	363 psig	363 psig	363 psig
Size 08 x 3/4" Type A	363 psig	363 psig	363 psig
Size 08 x 1" Type B	363 psig	363 psig	363 psig
Size 12 x 1" Type B	363 psig	363 psig	363 psig

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PRODUCT DESCRIPTION			
Design Report:	R-1232E		
Product Description	Process Connections	Design Code	Material Specification (Note 2)
H9037, H9038 Hose Assemblies	Size 04 x 1/4" Type A ASME BPE Ferrule, Size 06 x 3/8" Type A ASME BPE Ferrule, (Note 4)	ARPM IP-2 Ninth Edition; 2015, ASME B31.3, 2018	Braid: Type 304 Stainless Steel (Tensile 1900 N/MM ² min, 2150 N/MM ² max.) Collar, Fitting, Nuts, Ferrules: ASTM A479-304 / AMS 5639 ASTM A479-304L / AMS 5647 ASTM A182-304 / AMS 5639 ASTM A182-304L / AMS 5647 Retention Pin: ASTM A580-302 / AMS 5637, ASTM A580-305
PRODUCT DESCRIPTION			
Hose Size	Group 1 Service MAWP AT 302°F (Note 1)	Group 2 Service MAWP AT 302°F (Note 1)	Group 3 Service MAWP AT 302°F (Note 1)
04 x 1/4" Type A	363 psig	363 psig	363 psig
06 x 3/8" Type A	363 psig	363 psig	363 psig

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PRODUCT DESCRIPTION			
Design Report:	R-1232E		
Product Description	Process Connections	Design Code	Material Specification (Note 2)
H9037, H9038 Hose Assemblies	Size 08 x 1/2" Type A, Size 08 x 1" Type B, Size 08 x 1-1/2" Type B, Size 12 x 3/4" Type A, Size 12 x 1" Type B, Size 12 x 1-1/2" Type B, Size 16 x 1" Type B, Size 16 x 1-1/2" Type B, ASME BPE Ferrule. (Note 4)	ARPM IP-2 Ninth Edition; 2015, ASME B31.3, 2018	Braid: Type 304 Stainless Steel (Tensile 1800 N/MM ² min, 2050 N/MM ² max.) Collar, Fitting, Nuts, Ferrules: ASTM A479-304 / AMS 5639 ASTM A479-304L / AMS 5647 ASTM A182-304 / AMS 5639 ASTM A182-304L / AMS 5647 Retention Pin: ASTM A580-302 / AMS 5637, ASTM A580-305
PRODUCT DESCRIPTION			
Hose Size	Group 1 Service MAWP AT 302°F (Note 1)	Group 2 Service MAWP AT 302°F (Note 1)	Group 3 Service MAWP AT 302°F (Note 1)
08 x 1/2" Type A	363 psig	363 psig	348 psig
08 x 1" Type B	363 psig	363 psig	348 psig
08 x 1-1/2" Type B	363 psig	363 psig	348 psig
12 x 3/4" Type A	363 psig	363 psig	244 psig
12 x 1" Type B	363 psig	363 psig	244 psig
12 x 1-1/2" Type B	363 psig	363 psig	244 psig
16 x 1" Type B	363 psig	363 psig	216 psig
16 x 1-1/2" Type B	363 psig	363 psig	216 psig

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NOTES:

1) The maximum allowable working pressures (MAWP) stated above are applicable to the following Service Groups:

Group 1: Water and all other liquids, solid materials suspended in liquids or air, compressed air and other gases.

Group 2: Liquid media that immediately changes into gas under standard atmospheric conditions.

Group 3: Steam

2) AMS = Aerospace Material Specification. Material meeting the requirements of the AMS specification specified must meet the requirements of the equivalent ASTM specification for the CRN to be valid.

3) For low temperature operation the products shall conform to the rules of the applicable codes under which they are used.

4) The ASME Ferrule connection shall be used with a clamp, however the assembly clamp is not part of this CRN. Pressure-Temperature ratings may be limited by the clamp type used in the joint assembly. The clamp used to complete the joint shall have its own CRN and shall have pressure-temperature ratings the same or higher than the product ratings.