ABSA
the pressure equipment safety authority

9410 - 20 Ave N.W.
Edmonton, Alberta, Canada T6N 0A4
Tel: (780) 437-9100 / Fax: (780) 437-7787

April 19, 2017

Attention: Ivan Bakken
GRM FLOW PRODUCTS
2115 91 AVENUE
EDMONTON, AB T6P 1L1

Email: ibakken@grmflow.com

The design submission, tracking number 2016-06354, originally received on December 02, 2016 was surveyed and accepted for registration as follows:

CRN : 0C17585.2 **Accepted on:** April 19, 2017

Reg Type: New Design **Expiry Date:** April 19, 2027

Drawing No. : MATERIAL SPECIFICATION OF NEEDLE VALVES (4 PAGES) & DRAWINGS

Fitting type: NEEDLE VALVES

Design registered in the name of : TIANJIN YUANCAN METAL PRODUCTS LTD

Description	MAWP	Design Temperature	MDMT
Internal Pressure	68948kPa	38 °C	-29 °C

The registration is conditional on your compliance with the following notes:

As indicated on AB-41 Statutory Declaration form and submitted documentation, the code of construction is ASME B31.3.

This registration is valid only for fittings fabricated at the location(s) covered by the QC certificate attached to the accepted AB-41 Statutory Declaration form.

This registration is valid only until the indicated expiry date and only if the Manufacturer maintains a valid quality management system approved by an acceptable third-party agency until that date.

Should the approval of the quality management system lapse before the expiry date indicated above, this registration shall become void.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

Enclosed are stamped prints for your reference.

Sincerely,

TANG, TAO, P. Eng.

Alberta Municipal Affairs

ABSA
the pressure equipment safety authority

AB-41 2016-01

STATUTORY DECLARATION
Registration of Fittings

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

GRM
FLOW PRODUCTS

I, Liang Li (name of applicant), President (position title) (must be in a position of authority)

of Tianjin Yuancan Metal Products Ltd. (name of manufacturer)

located at South Nanling Rd, Taihedushi Industrial Park, Xiqing Dist,Tianjin (plant address)

do solemnly declare that the fittings listed hereunder, which are subject to the Safety Codes Act
(check one)

☐ comply with the requirements of _____ (title of recognized North American Standard) which specifies the dimensions, 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 ASME B31.3 (title of code of construction or other applicable document) 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 manufacture of these fittings is controlled by a quality control program which has been verified by the following authority, NQA as being suitable for the manufacture of these fittings to the stated standard. The fittings covered by this declaration, for which I seek registration, are

Needle Valves (brief description of fittings)

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

24 sets of Design Drawings and Calculations and Analysis of Needle Valve

DECLARED before me at Sherwood Park (city) in the Province of Alberta (province or state)

this 1st day of December (Month), 2016 (Year)

KARA LEE HUDSON
A COMMISSIONER FOR OATHS IN AND FOR THE PROVINCE OF ALBERTA
MY COMMISSION EXPIRES SEPT. 07, 2018

(print) Kara Hudson (a Commissioner of Oaths or Notary Public)

(sign) _____ (a Commissioner of Oaths or Notary Public)

_____ (signature of applicant)

For ABSA Office Use Only:

NOTES: _____

To the best of my knowledge and belief, the application meets the requirements of the Safety Codes Act and CSA Standard B51, Clause 4.2, and is accepted for registration in Category E

Registration Number: OC 17585.2

_____ (Signature of the Administrator/SCO)

Date Registered: APR 19 2017

Expiry Date: April 19, 2027

5. Chemical Composition

5.1. As per material specification for Grade under ASTM A105 Standard Specification.
5.2. As per material specification for Grade under ASTM A108 Standard Specification.
5.3. As per material specification for Grade under ASTM A182 Standard Specification.
5.4. As per material specification for Grade under ASTM A479 Standard Specification.

6. Condition

6.1. Material ASTM A105 Forged.
6.2. Material ASTM A182 Forged.
6.3. Material ASTM A108 Cold Drawn.
6.4. Material ASTM A479 Strain-hardened Level 1.

7. Shape and Size

7.1. As specified in **Table: Valve List and Material Specification**.

8. Heat Treatment Requirements

8.1. None required.

9. Report of Heat Analysis

9.1. Mill test report required.

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10. Mechanical Property Test Report Requirements

10.1. Material ASTM A105 Forged Carbon Steel, Minimum Yield Strength 36 ksi, Minimum Tensile Strength 70 ksi.
10.2. Material ASTM A182 Forged 316SS Stainless Steel, Minimum Yield Strength 30 ksi, Minimum Tensile Strength 75 ksi.
10.3. Material ASTM A108 Cold Drawn Steel, Minimum Yield Strength 50 ksi, Minimum Tensile Strength 60 ksi.
10.4. Material ASTM A479 Strain-Hardened Level 1 316SS Stainless Steel, Minimum Yield Strength 65 ksi, Minimum Tensile Strength 85 ksi.

Table: Valve List and Material Specification

ORIENTATION	PART NUMBER	NPT THREAD	NEEDLE VALVE SIZE	MATERIAL									
				BODY SIZE	STEEL	BODY	BONNET	STEM	HANDLE	HANDLE BOLT	BONNET HOOD	BACK-UP RING	"O" RING SEAL	LOCK PIN
STRAIGHT VALVE	NV125001	MXF	CS 1/4" MXF	S1.125"	CS	ASTM A108		ASTM A479 SS 316	ASTM A108	STEEL GRADE 5	POLYETHYLENE	VITON		18-8 STAINLESS
	NV137001		CS 3/8" MXF											
	NV150001		CS 1/2" MXF											
	NV125501	FXF	CS 1/4" FXF											
	NV137501		CS 3/8" FXF											
	NV150501		CS 1/2" FXF											
	NV125002	MXF	SS 1/4" MXF		SS	ASTM A479 SS316			A479 SS 304	18-8 STAINLESS				
	NV137002		SS 3/8" MXF											
	NV150002		SS 1/2" MXF											
	NV151202		SS 1/2" MXF EXT											
	NV125502	FXF	SS 1/4" FXF											
	NV137502		SS 3/8" FXF											
	NV150502		SS 1/2" FXF											
ANGLED VALVE	NV125551	FXF	CS 1/4" FXF	S1.125"	CS	ASTM A105	ASTM A108							
	NV137551		CS 3/8" FXF											
	NV150551		CS 1/2" FXF	S1.250"										
	NV125051	MXF	CS 1/4" MXF	S1.125"										
	NV137051		CS 3/8" MXF											
	NV150051		CS 1/2" MXF	S1.250"										
	NV125552	FXF	SS 1/4" FXF	S1.125"	SS	ASTM A182	ASTM A479 SS316							
	NV137552		SS 3/8" FXF											
	NV150552		SS 1/2" FXF	S1.375"										
	NV125052	MXF	SS 1/4" MXF	S1.125"										
	NV137052		SS 3/8" MXF											
	NV150052		SS 1/2" MXF	S1.375"										

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Material Specification

1. Scope

1.1. This specification applies to ¼", $^{3}/_{8}$" and ½" with 10,000-psi needle valves as specified in **Table: Valve List and Material Specification**.

1.2. *GRM Flow Products* part numbers are listed in **Table: Valve List and Material Specification**.

1.3. The material of the body and parts shall meet all the requirements of these specifications as specified in **Table: Valve List and Material Specification.**

2. Material Name

2.1. A105 Carbon Steel Forgings.

2.2. A108 Steel Bars.

2.3. A182 Stainless Steel Forgings and Fittings.

2.4. A479 Strain-Hardened Stainless Steel.

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3. Referenced ASTM Specifications

3.1. ASTM A105 - 98 Standard Specification for Carbon Steel Forgings for Piping Applications.

3.2. ASTM A108 - 99 Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.

3.3. ASTM A182 - 99 Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.

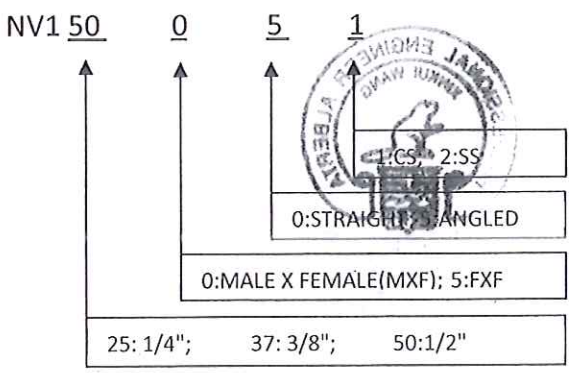
3.4. ASTM A479 – 99a Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels.

3.5. Allowable Grades for material A108: 1010/1015 /1016/1018 /1020 /1030 /1035 /1040 / 1045 / 1117 / 1118 /1137 /1144 / 1211/1212 / 1213 / 1215.

3.6. Allowable Grades for material A182: F 316.

3.7. Allowable UNS Designation for material A479: S34709, S34800, S34809, Type 316.

4. Part Size and number



Material Specification

of

Needle Valves ($^1/_4$", $^3/_8$", and ½")

PREPARED FOR
GRM FLOW PRODUCTS
BY CHENYU LINK LTD.

ABSA
SAFETY CODES ACT - PROVINCE OF ALBERTA
REGISTRATION OF FITTINGS
REGISTRATION NO. DC 17585 • 2
DWG. NO. ~~or CAT. NO.~~ This 4 Pages & Drawings
TYPE OF FITTINGS Needle Valves
APR 19 2017 INITIALS
Date
MO TANG, P.Eng.
DESIGN SURVEY ENGINEER

USE OF OR RELIANCE ON THE INFORMATION IN THIS DOCUMENT IS NOT AUTHORIZED UNLESS BOTH THE ENGINEERING STAMP AND THE PERMIT TO PRACTICE ARE SIGNED AND DATED.

PERMIT TO PRACTICE
CHENYU LINK LTD.
APEGA PERMIT No. 13545
SIGNED: DATE: Apr.06,2017

ENGINEERING STAMP

PROFESSIONAL ENGINEER ALBERTA
XUKUI WANG
Apr.06,17

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