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TÜV SÜD America Attestation: 72109498-NGV4.2 R1

# ATTESTATION

**Attestation Number:** 72109498-NGV4.2-2014 R1

**Issued To:** Swagelok Company  
29500 Solon Road  
Solon, OH 44139 USA

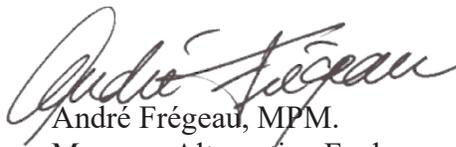
**Standard:** Fuel system components for compressed natural gas  
powered vehicles  
ANSI / CSA NGV 4.2-2014.

**Components:** See list in 2<sup>nd</sup> page of this attestation.

As an independent inspection agency, TÜV SÜD America attests that representative components listed in the 2<sup>nd</sup> page of this attestation have met all the design and test qualification requirements of Fuel system components for compressed natural gas powered vehicles per ANSI / CSA NGV 4.2-2014.

These components were designed and tested for use with compressed natural gas. These components should be installed, used, and maintained in accordance with the manufacturer's instructions.

**Prepared and approved by:**



André Frégeau, MPM.  
Manager Alternative Fuels  
TÜV SÜD America,  
Industry Service Division  
04/30/2021.





TÜV SÜD America Attestation: 72109498-NGV4.2 R1

## List of Components attested to NGV4.2-2014 standard

### Hoses:

Type	Hose Size	Drawing #	Service Pressure (psi / bar)	Temperature Rating (°F / °C)
NG-	4	SS-NGS4-NGV-APPROVAL, Rev. A	5000 / 345	-40°F to +150°F / -40°C to +65°C
	6	SS-NGS6-NGV-APPROVAL, Rev. A	5000 / 345	-40°F to +150°F / -40°C to +65°C
	8	SS-NGS8-NGV-APPROVAL, Rev. A	5000 / 345	-40°F to +150°F / -40°C to +65°C
NG-T	4	SS-NGT4-NGV-APPROVAL, Rev. A	5000 / 345	-40°F to +150°F / -40°C to +65°C
	6	SS-NGT6-NGV-APPROVAL, Rev. A	5000 / 345	-40°F to +150°F / -40°C to +65°C
	8	SS-NGT8-NGV-APPROVAL, Rev. A	5000 / 345	-40°F to +150°F / -40°C to +65°C

- NOTES:
- 1.) EC1 AND EC2 REPRESENT THE END CONNECTIONS FROM TABLE 1.
  - 2.) XX = CUSTOMER REQUESTED LENGTH IN INCHES, ALSO XXCM FOR LENGTH IN CENTIMETERS
  - 3.) BULK LABELS ARE PLACED A MAX. OF EVERY 45cm [18"] ALONG HOSE
  - 4.) BULK LABELS ARE NOT REQUIRED IF THE LAY LINE CONTAINS NGV 3.1 / 4.2 INFORMATION.
  - 5.) LABELS AND/OR LAY LINE NGV 3.1 / 4.2 INFORMATION IS VISIBLE BETWEEN SPRING COILS.
  - 6.) -S AFTER XX = WITH HOSE-LENGTH SPRING GUARD.  
-S7 AFTER XX = WITH 12.7cm [5"] LONG SPRING GUARD ON ONE END.  
-X AFTER XX = STANDARD SPRING CUFFS REMOVED.
  - 7.) EXACT MINIMUM ASSEMBLY LENGTH IS DETERMINED BY END CONNECTION AND SPRING SELECTIONS. GENERAL MINIMUM LENGTH WITH BOTH SPRINGS OR S OPTION = 18", WITH S7 OPTION = 14", WITH X OPTION = 9".
  - 8.) PLACEMENT AND ATTACHMENT METHOD OF WARNING TAG VARIES WITH HOSE CONFIGURATION.
  - 9.) ADDITIONAL INFORMATION MAY BE PRESENT ON HOSE LAY LINE.

SEE NGS-4-NGV-BULK-TAG

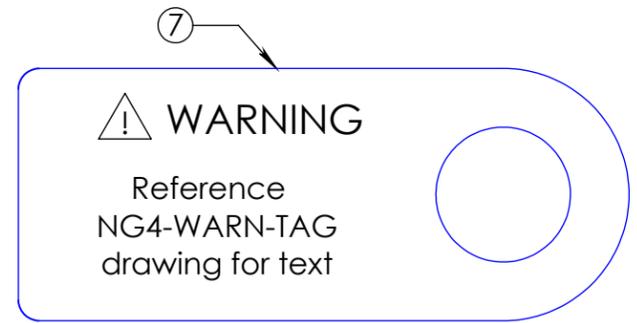
BULK LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468

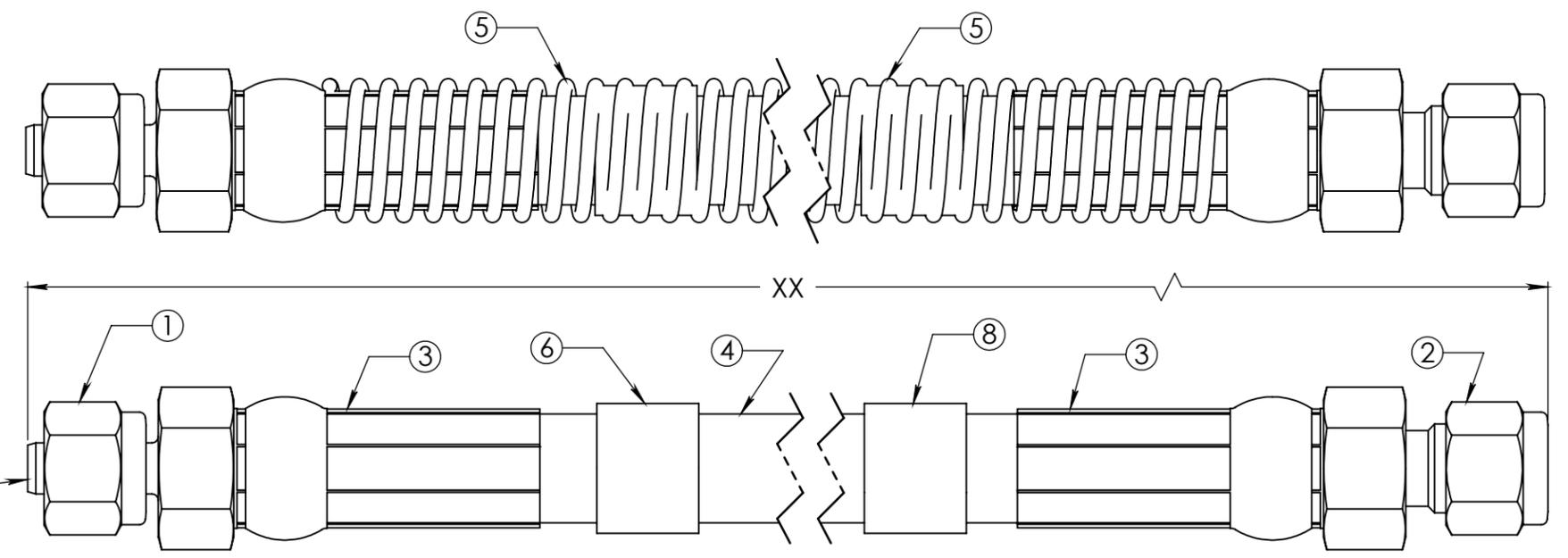
SEE NG-NGV-ASSEMBLY-TAG

ASSEMBLY LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468



OPTIONAL ASSEMBLY WITHOUT SPRING GUARD



DESCRIPTION: 1/4" THERMOPLASTIC HOSE APPROVAL DRAWING

MATERIAL: HOSE - THERMOPLASTIC POLYURETHANE OVER SYNTHETIC FIBER BONDED TO NYLON CORE.

SPECIFICATION: NGV 3.1-2014 / NGV 4.2-2014

**SWAGELOK® NG-4-NGV** 1/4" I.D. -40°C to +85°C NGV3.1 CLASS B [248 BAR SP] MADE IN MEXICO  
MM/YY -40°C to +65°C NGV4.2 CLASS A [345 BAR MAWP] Lot XXXXXX

LAY LINE

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DWG. NO. SS-NGS4-NGV-APPROVAL

TABLE 1 - END CONNECTION OPTIONS

END CONNECTION	SIZE	PART NUMBER DESIGNATOR FOR EC1, EC2
SWAGELOK TUBE FITTING	FRACTIONAL - 1/4"	S4
	METRIC - 8MM	G8
	METRIC - 6MM	G6
SWAGELOK TUBE ADAPTER	FRACTIONAL - 3/8"	T6
	FRACTIONAL - 1/4"	T4
	METRIC - 8MM	E8
	METRIC - 6MM	E6
MALE PIPE THREADS, NPT	FRACTIONAL - 1/4"	P4
SAE 37° (JIC) FEMALE SWIVEL	FRACTIONAL - 1/4"	A4
MALE SAE	FRACTIONAL - 1/4"	R4

TABLE 2 - BILL OF MATERIALS

ITEM	DESCRIPTION
1	END CONNECTION 1 (EC1)
2	END CONNECTION 2 (EC2)
3	SHELL
4	HOSE
5	302 SS SPRING GUARD (5")
6	ASSEMBLY LABEL
7	WARNING TAG
8	BULK LABEL (NOTE 4)

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SAP CHANGE NUMBER

DCN-00150593



DWG. NO. SS-NGS4-NGV-APPROVAL

SHEET 2 of 2

SCALE NONE

REV. A

- NOTES:
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  - 8.) PLACEMENT AND ATTACHMENT METHOD OF WARNING TAG VARIES WITH HOSE CONFIGURATION.
  - 9.) ADDITIONAL INFORMATION MAY BE PRESENT ON HOSE LAY LINE.

SEE NGS-6-NGV-BULK-TAG

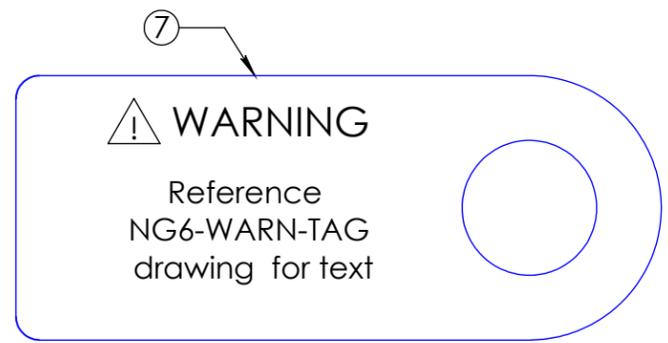
BULK LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468

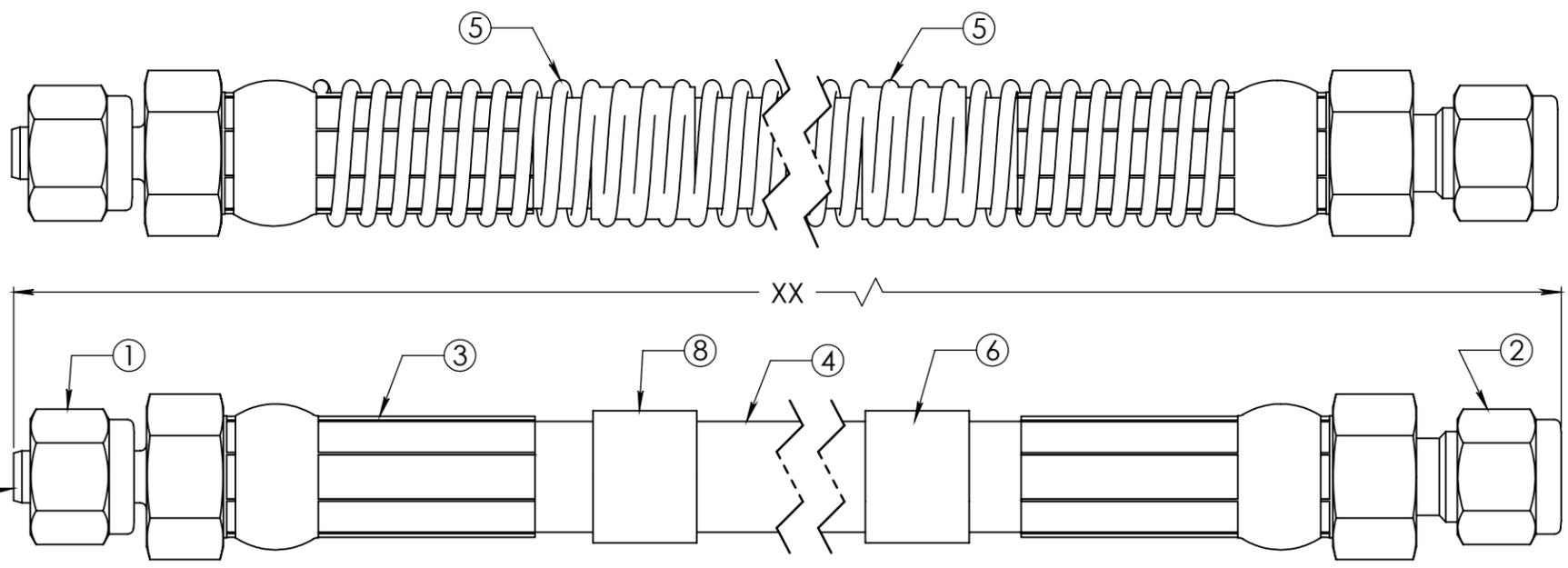
SEE NG-NGV-ASSEMBLY-TAG

ASSEMBLY LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468



OPTIONAL ASSEMBLY WITHOUT SPRING GUARD



DESCRIPTION: 3/8" THERMOPLASTIC HOSE APPROVAL DRAWING

MATERIAL: HOSE - THERMOPLASTIC POLYURETHANE OVER SYNTHETIC FIBER BONDED TO NYLON CORE.

SPECIFICATION: NGV 3.1-2014 / NGV 4.2-2014

**SWAGELOK® NG-6-NGV** 3/8" I.D. -40°C to +85°C NGV3.1 CLASS B [248 BAR SP] MADE IN MEXICO  
MM/YY -40°C to +65°C NGV4.2 CLASS A [345 BAR MAWP] Lot XXXXXX

LAY LINE

NOTE 9

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DWG. NO. SS-NGS6-NGV-APPROVAL

SHEET 1 of 2
SCALE NONE
REV. A

TABLE 1 - END CONNECTION OPTIONS

END CONNECTION	SIZE	PART NUMBER DESIGNATOR
SWAGELOK TUBE FITTING	FRACTIONAL - 3/8"	S6
	METRIC - 10MM	G1
SWAGELOK TUBE ADAPTER	FRACTIONAL - 1/2"	T8
	FRACTIONAL - 3/8"	T6
	METRIC - 10MM	E1
MALE PIPE THREADS, NPT	FRACTIONAL - 3/8"	P6
	FRACTIONAL - 1/4"	P4
SAE 37° (JIC) FEMALE SWIVEL	FRACTIONAL - 3/8"	A6
MALE SAE	FRACTIONAL - 3/8"	R6

TABLE 2 - BILL OF MATERIALS

ITEM	DESCRIPTION
1	END CONNECTION 1 (EC1)
2	END CONNECTION 2 (EC2)
3	SHELL
4	HOSE
5	302 SS SPRING GUARD (5")
6	ASSEMBLY LABEL
7	WARNING TAG
8	BULK LABEL (NOTE 4)

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DWG. NO. SS-NGS6-NGV-APPROVAL

SHEET 2 of 2

SCALE NONE

REV. A

- NOTES:
- 1.) EC1 AND EC2 REPRESENT THE END CONNECTIONS FROM TABLE 1.
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  - 4.) BULK LABELS ARE NOT REQUIRED IF THE LAY LINE CONTAINS NGV 3.1 / 4.2 INFORMATION.
  - 5.) LABELS AND/OR LAY LINE NGV 3.1 / 4.2 INFORMATION IS VISIBLE BETWEEN SPRING COILS.
  - 6.) -S AFTER XX = WITH HOSE-LENGTH SPRING GUARD. -S7 AFTER XX = WITH 12.7cm [5"] LONG SPRING GUARD ON ONE END. -X AFTER XX = STANDARD SPRING CUFFS REMOVED.
  - 7.) EXACT MINIMUM ASSEMBLY LENGTH IS DETERMINED BY END CONNECTION AND SPRING SELECTIONS. GENERAL MINIMUM LENGTH WITH BOTH SPRINGS OR S OPTION = 18", WITH S7 OPTION = 14", WITH X OPTION = 9".
  - 8.) PLACEMENT AND ATTACHMENT METHOD OF WARNING TAG VARIES WITH HOSE CONFIGURATION.
  - 9.) ADDITIONAL INFORMATION MAY BE PRESENT ON HOSE LAY LINE.

SEE NGS-8-NGV-BULK-TAG

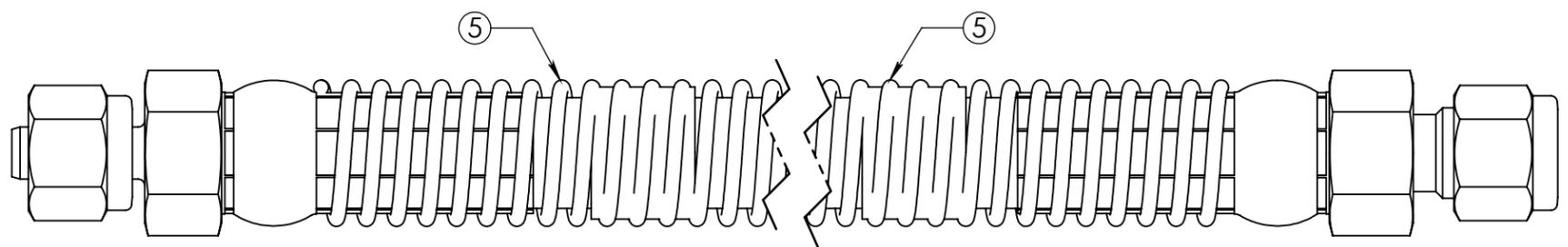
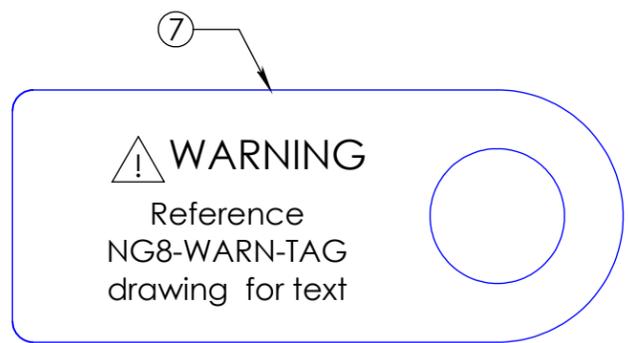
BULK LABEL

LABEL DESCRIPTION:  
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ADHESIVE TYPE = 3M 468

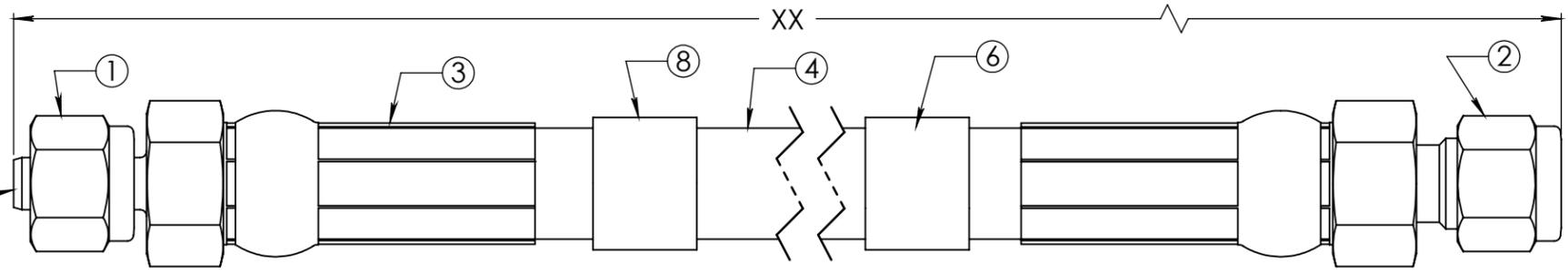
SEE NG-NGV-ASSEMBLY-TAG

ASSEMBLY LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468



OPTIONAL ASSEMBLY WITHOUT SPRING GUARD



DESCRIPTION: 1/2" THERMOPLASTIC HOSE APPROVAL DRAWING

MATERIAL: HOSE - THERMOPLASTIC POLYURETHANE OVER SYNTHETIC FIBER BONDED TO NYLON CORE.

SPECIFICATION: NGV 3.1-2014 / NGV 4.2-2014

**SWAGELOK® NG-8-NGV** 1/2" I.D. -40°C to +85°C NGV3.1 CLASS B [248 BAR SP] MADE IN MEXICO  
MM/YY -40°C to +65°C NGV4.2 CLASS A [345 BAR MAWP] Lot XXXXXX

LAY LINE

NOTE 9

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DWG. NO. SS-NGS8-NGV-APPROVAL

TABLE 1 - END CONNECTION OPTIONS

END CONNECTION	SIZE	PART NUMBER DESIGNATOR
SWAGELOK TUBE FITTING	FRACTIONAL - 1/2"	S8
	METRIC - 12MM	G2
SWAGELOK TUBE ADAPTER	FRACTIONAL - 1/2"	T8
	FRACTIONAL - 5/8"	T5
	METRIC - 12MM	E2
MALE PIPE THREADS, NPT	FRACTIONAL - 1/2"	P8
SAE 37° (JIC) FEMALE SWIVEL	FRACTIONAL - 1/2"	A8

TABLE 2 - BILL OF MATERIALS

ITEM	DESCRIPTION
1	END CONNECTION 1 (EC1)
2	END CONNECTION 2 (EC2)
3	SHELL
4	HOSE
5	302 SS SPRING GUARD (5")
6	ASSEMBLY LABEL
7	WARNING TAG
8	BULK LABEL (NOTE 4)

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SAP CHANGE NUMBER

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DWG. NO. SS-NGS8-NGV-APPROVAL

SHEET 2 of 2  
SCALE NONE

REV. A

- NOTES:
- 1.) EC1, EC2, EC3, and EC4 REPRESENT THE END CONNECTIONS FROM TABLE 1.
  - 2.) XX = CUSTOMER REQUESTED LENGTH IN INCHES, YY = END OFFSET VALUES.
  - 3.) BULK LABELS ARE PLACED A MAX. OF EVERY 45cm [18"] ALONG HOSE.
  - 4.) BULK LABELS ARE NOT REQUIRED IF THE LAY LINE CONTAINS NGV 3.1 / 4.2 INFORMATION.
  - 5.) LABELS AND/OR LAY LINE NGV 3.1 / 4.2 INFORMATION IS VISIBLE BETWEEN SPRING COILS.
  - 6.) -X AFTER YY = STANDARD SPRING CUFFS REMOVED.
  - 7.) EXACT MINIMUM ASSEMBLY LENGTH IS DETERMINED BY END CONNECTION AND OFFSET SELECTIONS. GENERAL MINIMUM LENGTH OF 36".
  - 8.) PLACEMENT AND ATTACHMENT METHOD OF WARNING TAG VARIES WITH HOSE CONFIGURATION.
  - 9.) ADDITIONAL INFORMATION MAY BE PRESENT ON HOSE LAY LINE.

SEE NGT-4-NGV-BULK-TAG

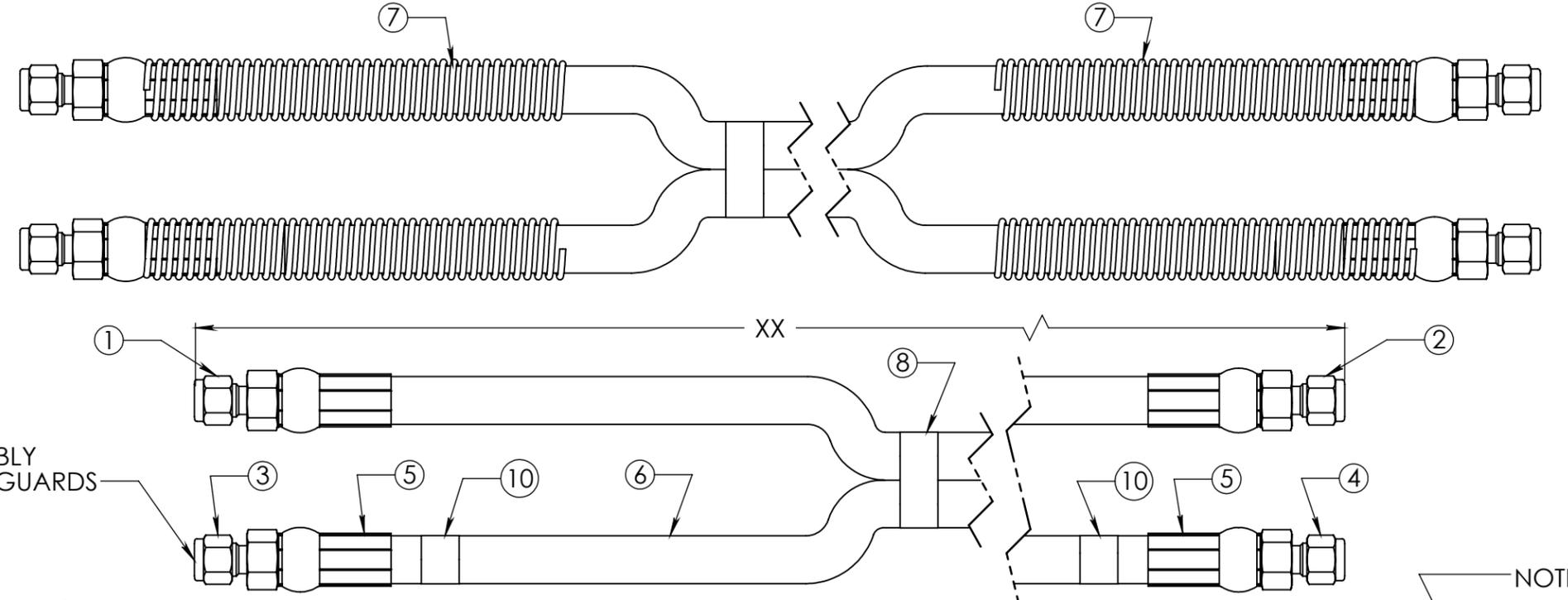
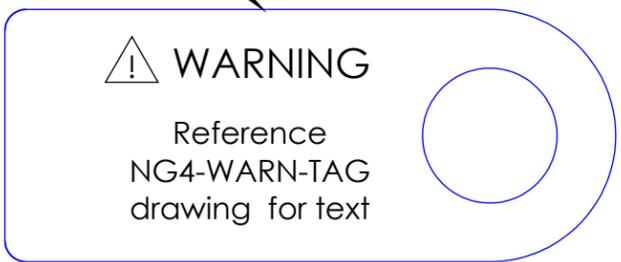
BULK LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468

SEE NG-NGV-ASSEMBLY-TAG

ASSEMBLY LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468



OPTIONAL ASSEMBLY WITHOUT SPRING GUARDS

DESCRIPTION: 1/4" THERMOPLASTIC HOSE APPROVAL DRAWING

MATERIAL: HOSE - THERMOPLASTIC POLYURETHANE OVER SYNTHETIC FIBER BONDED TO NYLON CORE.

SPECIFICATION: NGV 3.1-2014 / NGV 4.2-2014

**SWAGELOK® NG-4T-NGV** 1/4" I.D. -40°C to +85°C NGV3.1 CLASS B [248 BAR SP] MADE IN MEXICO  
MM/YY -40°C to +65°C NGV4.2 CLASS A [345 BAR MAWP] Lot XXXXXX

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**Swagelok**

DWG. NO. SS-NGT4-NGV-APPROVAL

SHEET 1 of 2  
SCALE NONE  
REV. A

TABLE 1 - END CONNECTION OPTIONS

END CONNECTION	SIZE	PART NUMBER DESIGNATOR FOR EC1, EC2, EC3, EC4
SWAGELOK TUBE FITTING	FRACTIONAL - 1/4"	S4
	METRIC - 8MM	G8
	METRIC - 6MM	G6
SWAGELOK TUBE ADAPTER	FRACTIONAL - 3/8"	T6
	FRACTIONAL - 1/4"	T4
	METRIC - 8MM	E8
	METRIC - 6MM	E6
MALE PIPE THREADS, NPT	FRACTIONAL - 1/4"	P4
SAE 37° (JIC) FEMALE SWIVEL	FRACTIONAL - 1/4"	A4
MALE SAE	FRACTIONAL - 1/4"	R4

TABLE 2 - BILL OF MATERIALS

ITEM	DESCRIPTION
1	END CONNECTION 1 (EC1)
2	END CONNECTION 2 (EC2)
3	END CONNECTION 3 (EC3)
4	END CONNECTION 4 (EC4)
5	SHELL
6	HOSE
7	302 SS SPRING GUARD (5")
8	ASSEMBLY LABEL
9	WARNING TAG
10	BULK LABEL (NOTE 4)

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SHEET 2 of 2  
SCALE NONE

REV. A

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  - 9.) ADDITIONAL INFORMATION MAY BE PRESENT ON HOSE LAY LINE.

SEE NGT-6-NGV-BULK-TAG

BULK LABEL

10

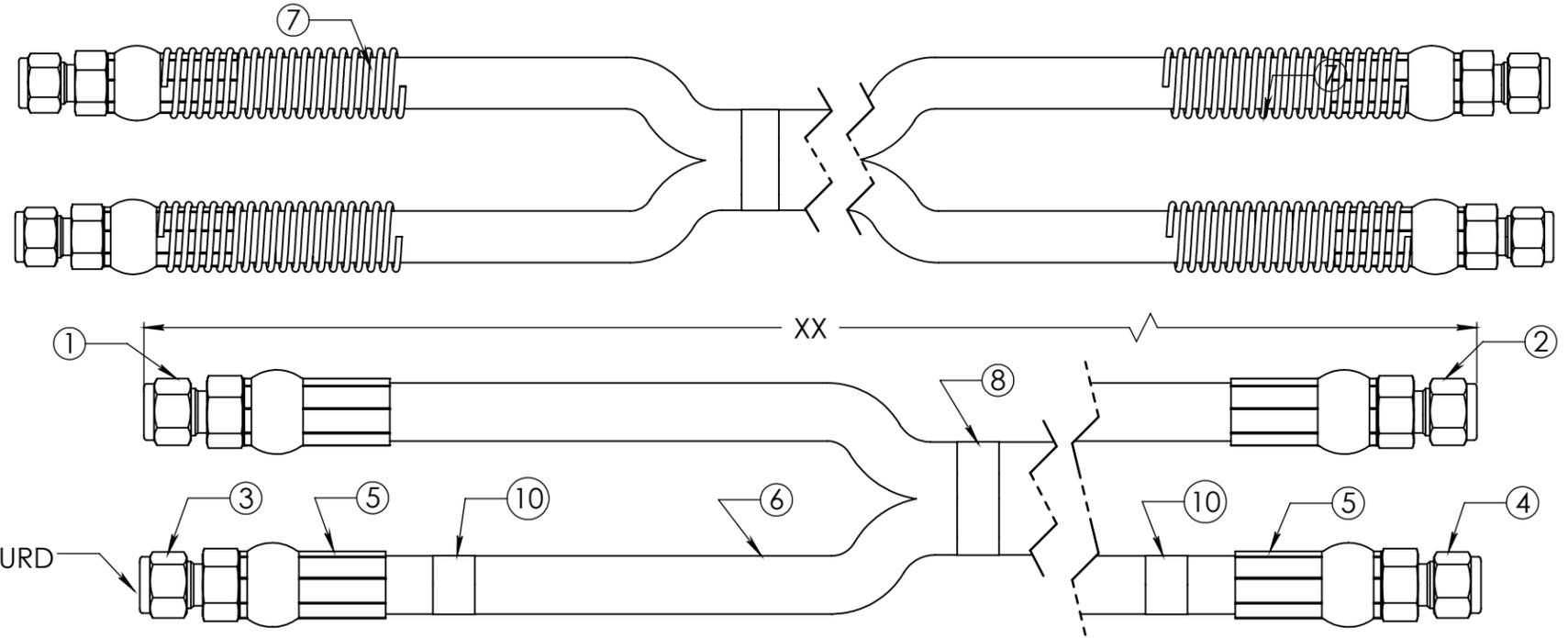
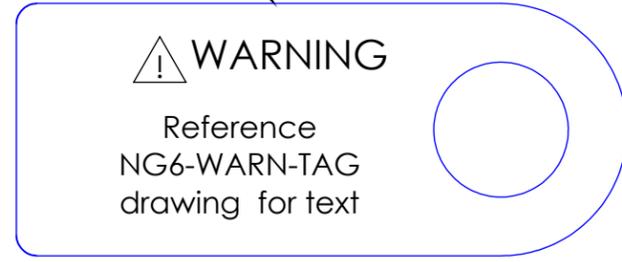
LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468

SEE NG-NGV-ASSEMBLY-TAG

ASSEMBLY LABEL

8

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468



OPTIONAL ASSEMBLY WITHOUT SPRING GAURD

DESCRIPTION: 3/8" THERMOPLASTIC HOSE APPROVAL DRAWING

MATERIAL: HOSE - THERMOPLASTIC POLYURETHANE OVER SYNTHETIC FIBER BONDED TO NYLON CORE.

SPECIFICATION: NGV 3.1-2014 / NGV 4.2-2014

**SWAGELOK® NG-6T-NGV** 3/8" I.D. -40°C to +85°C NGV3.1 CLASS B [248 BAR SP] MADE IN MEXICO  
MM/YY -40°C to +65°C NGV4.2 CLASS A [345 BAR MAWP] Lot XXXXXX

LAY LINE

NOTE 9

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DWG. NO. SS-NGT6-NGV-APPROVAL

SHEET 1 of 2
SCALE NONE
REV. A

TABLE 1 - END CONNECTION OPTIONS

END CONNECTION	SIZE	PART NUMBER DESIGNATOR
SWAGELOK TUBE FITTING	FRACTIONAL - 3/8"	S6
	METRIC - 10MM	G1
SWAGELOK TUBE ADAPTER	FRACTIONAL - 1/2"	T8
	FRACTIONAL - 3/8"	T6
	METRIC - 10MM	E1
MALE PIPE THREADS, NPT	FRACTIONAL - 3/8"	P6
	FRACTIONAL - 1/4"	P4
SAE 37° (JIC) FEMALE SWIVEL	FRACTIONAL - 3/8"	A6
MALE SAE	FRACTIONAL - 3/8"	R6

TABLE 2 - BILL OF MATERIALS

ITEM	DESCRIPTION
1	END CONNECTION 1 (EC1)
2	END CONNECTION 2 (EC2)
3	END CONNECTION 3 (EC3)
4	END CONNECTION 4 (EC4)
5	SHELL
6	HOSE
7	302 SS SPRING GUARD (5")
8	ASSEMBLY LABEL
9	WARNING TAG
10	BULK LABEL (NOTE 4)

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SAP CHANGE NUMBER

DCN-00150593



DWG. NO. SS-NGT6-NGV-APPROVAL

SHEET 2 of 2  
SCALE NONE

REV. A

- NOTES:
- 1.) EC, EC2, EC3, AND EC4 REPRESENT THE END CONNECTIONS FROM TABLE 1.
  - 2.) XX = CUSTOMER REQUESTED LENGTH IN INCHES, YY = END OFFSET VALUES.
  - 3.) BULK LABELS ARE PLACED A MAX. OF EVERY 45cm [18"] ALONG HOSE
  - 4.) BULK LABELS ARE NOT REQUIRED IF THE LAY LINE CONTAINS NGV 3.1 / 4.2 INFORMATION.
  - 5.) LABELS AND/OR LAY LINE NGV 3.1 / 4.2 INFORMATION IS VISIBLE BETWEEN SPRING COILS.
  - 6.) -X AFTER YY = STANDARD SPRING CUFFS REMOVED.
  - 7.) EXACT MINIMUM ASSEMBLY LENGTH IS DETERMINED BY END CONNECTION AND OFFSET SELECTIONS. GENERAL MINIMUM LENGTH OF 36".
  - 8.) PLACEMENT AND ATTACHMENT METHOD OF WARNING TAG VARIES WITH HOSE CONFIGURATION.
  - 9.) ADDITIONAL INFORMATION MAY BE PRESENT ON HOSE LAY LINE.

SEE NGT-8-NGV-BULK-TAG

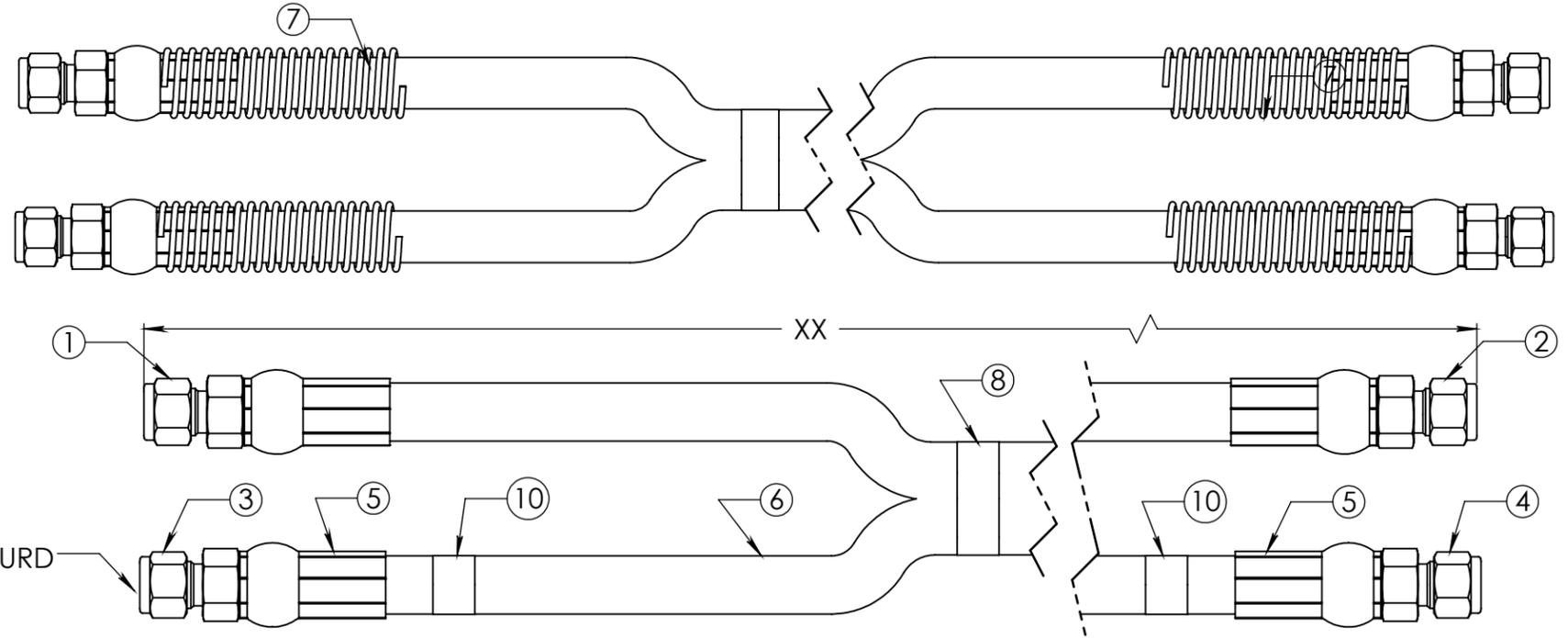
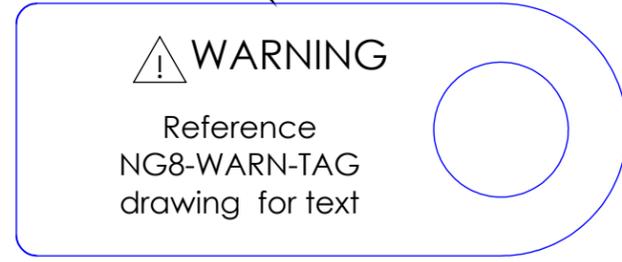
BULK LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468

SEE NG-NGV-ASSEMBLY-TAG

ASSEMBLY LABEL

LABEL DESCRIPTION:  
BLACK ALUMINUM LABEL W/SILVER TEXT  
ADHESIVE TYPE = 3M 468



OPTIONAL ASSEMBLY WITHOUT SPRING GAURD

DESCRIPTION: 1/2" THERMOPLASTIC HOSE APPROVAL DRAWING

MATERIAL: HOSE - THERMOPLASTIC POLYURETHANE OVER SYNTHETIC FIBER BONDED TO NYLON CORE.

SPECIFICATION: NGV 3.1-2014 / NGV 4.2-2014

**SWAGELOK® NG-8T-NGV** 1/2" I.D. -40°C to +85°C NGV3.1 CLASS B [248 BAR SP] MADE IN MEXICO  
MM/YY -40°C to +65°C NGV4.2 CLASS A [345 BAR MAWP] Lot XXXXXX

LAY LINE

NOTE 9

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SHEET 1 of 2
SCALE NONE
REV. A

TABLE 1 - END CONNECTION OPTIONS

END CONNECTION	SIZE	PART NUMBER DESIGNATOR
SWAGELOK TUBE FITTING	FRACTIONAL - 1/2"	S8
	METRIC - 12MM	G2
SWAGELOK TUBE ADAPTER	FRACTIONAL - 1/2"	T8
	FRACTIONAL - 5/8"	T5
	METRIC - 12MM	E2
MALE PIPE THREADS, NPT	FRACTIONAL - 1/2"	P8
SAE 37° (JIC) FEMALE SWIVEL	FRACTIONAL - 1/2"	A8

TABLE 2 - BILL OF MATERIALS

ITEM	DESCRIPTION
1	END CONNECTION 1 (EC1)
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SHEET 2 of 2

SCALE NONE

REV. A