

**FUGITIVE EMISSION TEST CERTIFICATE**

Date : July 27, 2016

Applicant / Manufacturer	: KVC CO., LTD.
Address of manufacturer	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 13, 2016 ~ July 14, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 150# 4" BB RF OS&Y H/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	: Rising Type
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 11.7 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-001 which were verified and endorsed by us.

**Intertek Korea Industry Service Ltd.**

H.K.Jeong/ General Manager



The issue of this certificate shall not relieve the SUPPLIER or MANUFACTURER from any responsibility or such guarantees as maybe arranged, or be interpreted so as in any way to imply acceptance of such goods. Neither shall Intertek Korea Industry Service Ltd behold esponsible in any way whatsoever for the technical accuracy and contents of the purchase order. Intertek Korea Industry Service

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Date : July 27, 2016


Applicant / Manufacturer	: KVC CO., LTD.
Address of manufacturer	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 14, 2016 ~ July 15, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 600# 4" BB RF OS&Y H/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 41.4 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-002 which were verified and endorsed by us.

**Intertek Korea Industry Service Ltd.**

H.K.Jeong/ General Manager



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Date : July 27, 2016

Applicant / Manufacturer	: KVC CO., LTD.
Address of manufacturer	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 15, 2016 ~ July 16, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 1500# 4" BB BW OS&Y H/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 41.4 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-003 which were verified and endorsed by us.

**Intertek Korea Industry Service Ltd.**

H.K.Jeong/ General Manager



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## FUGITIVE EMISSION TEST CERTIFICATE

Date : July 27, 2016

Applicant / Manufacturer	: KVC CO., LTD.
Address of manufacturer	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 16, 2016 ~ July 17, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 150# 12" BB RF OS&Y G/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 11.7 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-004 which were verified and endorsed by us.

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H.K.Jeong/ General Manager



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**FUGITIVE EMISSION TEST CERTIFICATE**

Date : July 27, 2016

Applicant / Manufacturer	: KVC CO., LTD.
Address of manufacturer	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 17, 2016 ~ July 18, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 600# 12" BB RF OS&Y G/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 41.4 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-005 which were verified and endorsed by us.

**Intertek Korea Industry Service Ltd.**

H.K.Jeong/ General Manager



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**FUGITIVE EMISSION TEST CERTIFICATE**

Date : July 27, 2016

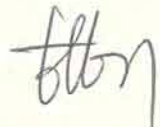
Applicant / Manufacturer	: KVC CO., LTD.
Address of manufacturer	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 18, 2016 ~ July 20, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 600# 20" BB RF OS&Y G/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 41.4 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-006 which were verified and endorsed by us.

**Intertek Korea Industry Service Ltd.**

H.K.Jeong/ General Manager



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Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 20, 2016 ~ July 22, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 150# 20" BB RF OS&Y G/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 11.7 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-007 which were verified and endorsed by us.

**Intertek Korea Industry Service Ltd.**

H.K.Jeong/ General Manager



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Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 22, 2016 ~ July 23, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Gate Valve 1500# 12" BB RF OS&Y G/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 41.4 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-008 which were verified and endorsed by us.

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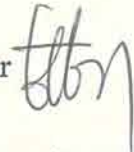
Applicant / Manufacturer	: KVC CO., LTD.
Address of manufacturer	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Address of test location	: #46-2, Nishinaka-cho, Nishinosho, Kisshoin, Minami-ku, Kyoto 601-8303, Japan
Date(s) of test	: July 24, 2016 ~ July 25, 2016
Kind of test	: Fugitive Emission Test According to API624
Description of Test valve	: Cast Steel Globe Valve 150# 12" BB RF OS&Y G/O
Valve component material & Type	
- Body	: ASTM A216-WCB
- Bonnet	: ASTM A216-WCB
- Stem	: ASTM A479-410
- Stem type	
- Packing type	
- Packing size	
- Connection of body and bonnet	
Design Standard	
Applicable drawing	
Test standard	
Test conditions	
- Test Medium	
- Test Pressure	: 11.7 Bar
- Test Temperature	: Ambient Temperature / Elevated Temperature(260°C)
- Number of Mechanical Cycle	: 310 Cycles
- Number of Thermal Cycles	: 3
- Packing Adjustment during the testing	: None
Extension of Qualification	: As per Para 1.0 of API 624

**This is to certify that the Fugitive Emission Test was performed by the manufacturer under our witness as above, and the results were satisfied within acceptance criteria of leakage through the test not exceed 100 ppmv.**

Note: The details of the test condition and data are as per manufacturer's Test Report No. API624-KVC2016-009 which were verified and endorsed by us.

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