

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 2.5-inch Model Deringer 20**

**Orientation: Horizontal (H)**

**Double Check Valve (DC)**

**Backflow Prevention Assembly**

*manufactured by*

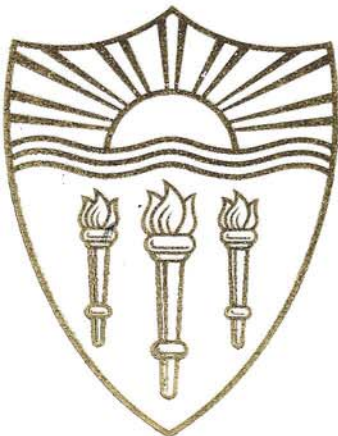
Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

This certificate is hereby granted for a period of three (3) years from the approval date below. This certificate may be renewed subject to a review of records and/or additional evaluation requirements at the discretion of the USC Foundation for additional three-year periods. Certificates of Approval are not recalled for the purpose of updating the effective date. The revision of date is only published on the USC List of Approved Backflow Prevention Assemblies. Additional information about this backflow prevention assembly is found on the current USC List of Approved Backflow Prevention Assemblies published on the USC Foundation website ([fccchr.usc.edu](http://fccchr.usc.edu)). Approved orientations, acceptable shutoff valves and status of lead-free compliance are shown on the list of approved assemblies.

Approval Date: 12/21/2015

Certificate No. C2015-113



DOI-2015.12.22

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 2.5-inch Model Deringer 20**

**Orientation: Vertical Up (VU)**

**Double Check Valve (DC)**

**Backflow Prevention Assembly**

*manufactured by*

Backflow Direct

3290 Monier Circle, Ste 300

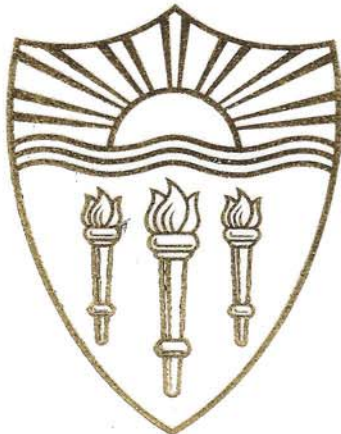
Rancho Cordova, CA 95742

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Approval Date: 12/21/2015

Certificate No. C2015-114



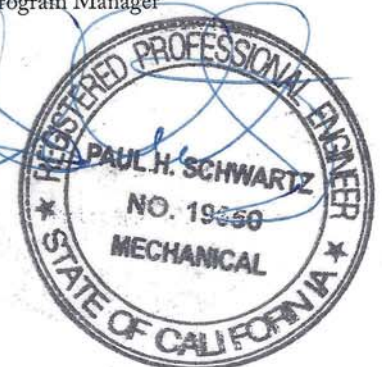
For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer



DOI-2015.12.22

University of Southern California

Research Annex 219, 3716 South Hope Street, Los Angeles, CA 90089-7700 • Tel: 866 545 6340 • Fax 213 740 8399 • [fccchr@usc.edu](mailto:fccchr@usc.edu) • [fccchr.usc.edu](http://fccchr.usc.edu)



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 2.5-inch Model Deringer 30**

**Orientation: Horizontal (H)**

**Double Check Detector Assembly Type II (DCDA-II)**

**Backflow Prevention Assembly**

*manufactured by*

Backflow Direct

3290 Monier Circle, Ste 300

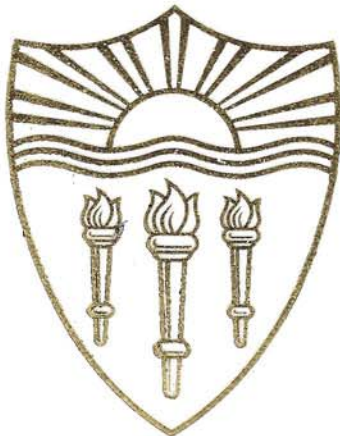
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Approval Date: 12/21/2015

Certificate No. C2015-119



DOI-2015.12.22

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 2.5-inch Model Deringer 30**

**Orientation: Vertical Up (VU)**

**Double Check Detector Assembly Type II (DCDA-II)**

**Backflow Prevention Assembly**

*manufactured by*

Backflow Direct

3290 Monier Circle, Ste 300

Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

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Approval Date: 12/21/2015

Certificate No. C2015-120



DOI-2015.12.22

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer





# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 2.5-inch Model Deringer 40

Orientation: H

Reduced Pressure Principle (RP)

Backflow Prevention Assembly

*manufactured by*

*Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742*

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

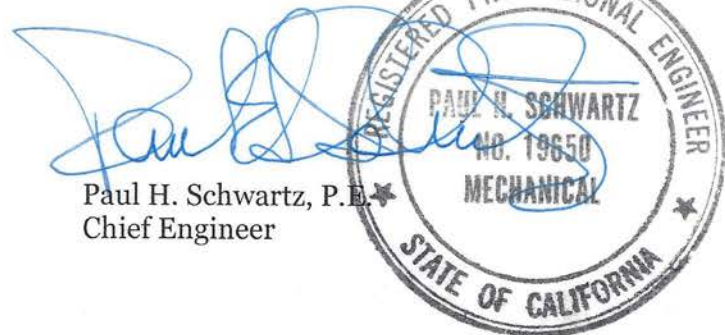
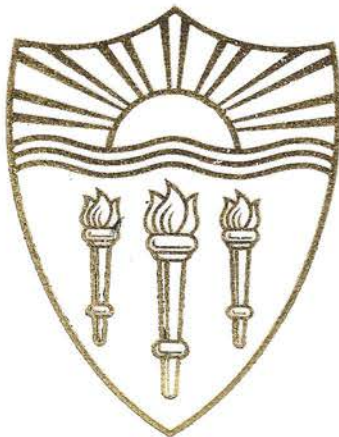
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Approval Date: 1/20/2017  
Certificate No. C2017-2

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



DOI-1/30/2017

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 2.5-inch Model Deringer 50  
Orientation: H

Reduced Pressure Principle - Detector Assembly Type II (RPDA-II)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

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Approval Date: 1/20/2017  
Certificate No. C2017-5



For the Foundation,

Henry W. Chang  
Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.  
Chief Engineer



DOI-1/30/2017



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

### **Backflow Direct 3-inch Model Deringer 20**

**Orientation: Horizontal (H)**

**Double Check Valve (DC)**

**Backflow Prevention Assembly**

*manufactured by*

Backflow Direct

3290 Monier Circle, Ste 300

Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

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Approval Date: 12/21/2015

Certificate No. C2015-115



DOI-2015.12.22

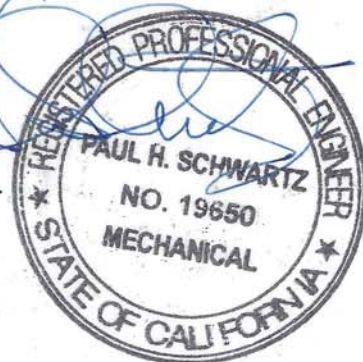
For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

### **Backflow Direct 3-inch Model Deringer 20**

**Orientation: Vertical Up (VU)**

**Double Check Valve (DC)**

**Backflow Prevention Assembly**

*manufactured by*

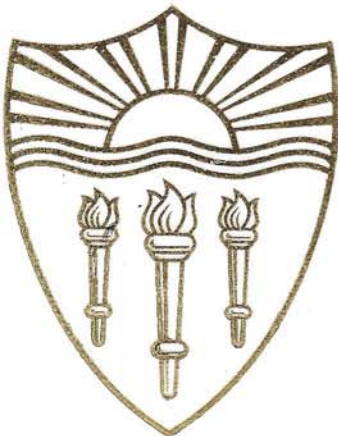
Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

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Approval Date: 12/21/2015

Certificate No. C2015-116



DOI-2015.12.22

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer





# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 3-inch Model Deringer 30**  
**Orientation: Horizontal (H)**  
**Double Check Detector Assembly Type II (DCDA-II)**  
**Backflow Prevention Assembly**

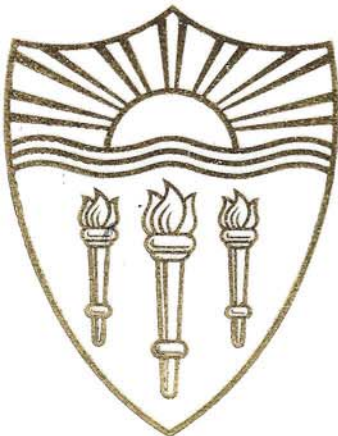
*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

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Approval Date: 12/21/2015  
Certificate No. C2015-121



DOI-2015.12.22

For the Foundation,

Henry W. Chang  
Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.  
Chief Engineer



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

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**Orientation: Vertical Up (VU)**  
**Double Check Detector Assembly Type II (DCDA-II)**  
**Backflow Prevention Assembly**

*manufactured by*

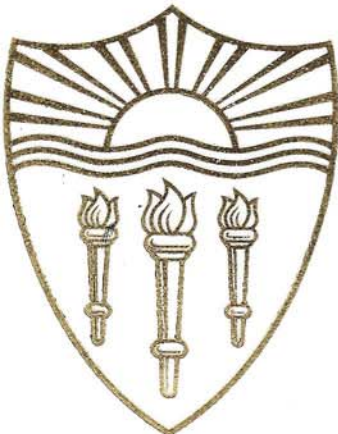
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Rancho Cordova, CA 95742

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Approval Date: 12/21/2015

Certificate No. C2015-122



DOI-2015.12.22

For the Foundation,

Henry W. Chang  
Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.  
Chief Engineer





# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 3-inch Model Deringer 40  
Orientation: H

Reduced Pressure Principle (RP)  
Backflow Prevention Assembly

*manufactured by*

*Backflow Direct*  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

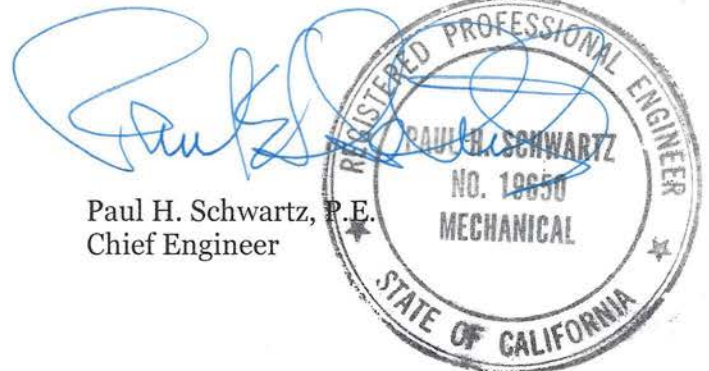
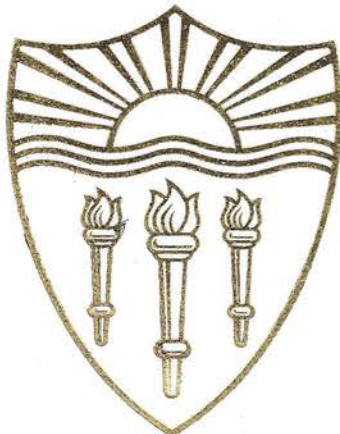
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Approval Date: 1/20/2017  
Certificate No. C2017-3

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer

DOI-1/30/2017

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 3-inch Model Deringer 50

Orientation: H

Reduced Pressure Principle - Detector Assembly Type II (RPDA-II)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

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Approval Date: 1/20/2017  
Certificate No. C2017-6



For the Foundation,

Henry W. Chang  
Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.  
Chief Engineer



DOI-1/30/2017



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 4-inch Model Deringer 20**

**Orientation: H**

**Double Check Valve (DC)**

**Backflow Prevention Assembly**

*manufactured by*

Backflow Direct

3290 Monier Circle, Ste 300

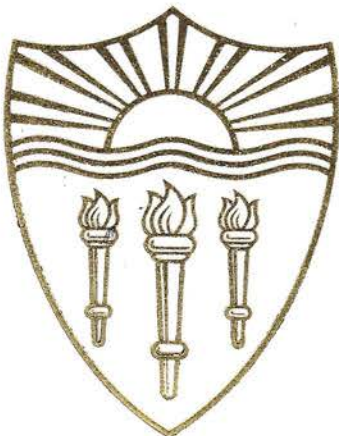
Rancho Cordova, CA 95742

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Approval Date: 9/30/2015

Certificate No. C2015-91



DOI-2015.10.19

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer



# University of Southern California

## Foundation for Cross-Connection Control and Hydraulic Research

# *Certificate of Approval*

*This is to certify that the*

### **Backflow Direct 4-inch Model Deringer 20**

**Orientation: VU**

**Double Check Valve (DC)**

**Backflow Prevention Assembly**

*manufactured by*

Backflow Direct

3290 Monier Circle, Ste 300

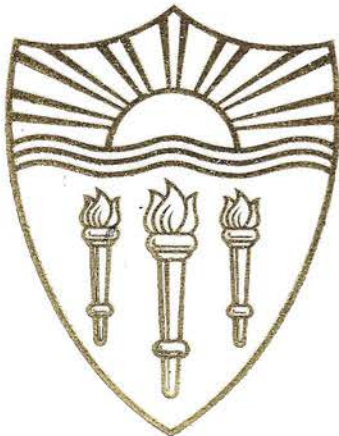
Rancho Cordova, CA 95742

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Approval Date: 9/30/2015

Certificate No. C2015-92

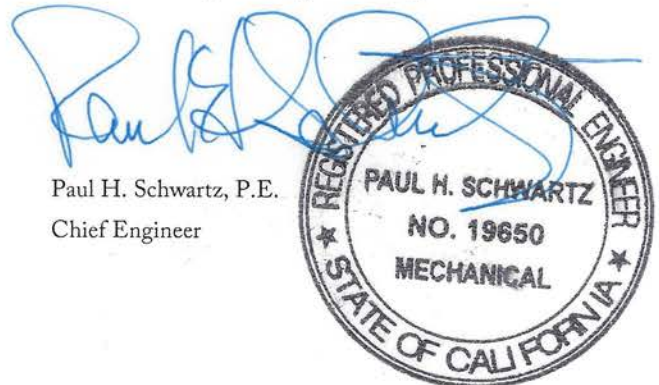


DOI-2015.10.19

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.

Chief Engineer



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 4-inch Model Deringer 30**

**Orientation: H**

**Double Check Detector Assembly Type II (DCDA-II)**

**Backflow Prevention Assembly**

*manufactured by*

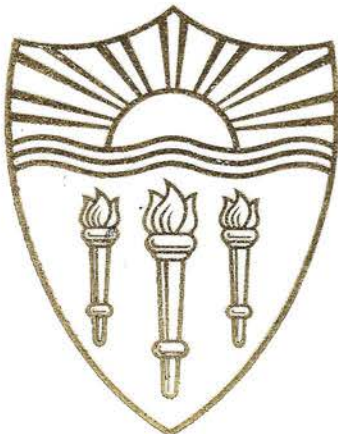
Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

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Approval Date: 9/30/2015

Certificate No. C2015-97



DOI-2015.10.19

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer



# University of Southern California

## Foundation for Cross-Connection Control and Hydraulic Research

# *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 4-inch Model Deringer 30**

**Orientation: VU**

**Double Check Detector Assembly Type II (DCDA-II)**

**Backflow Prevention Assembly**

*manufactured by*

Backflow Direct

3290 Monier Circle, Ste 300

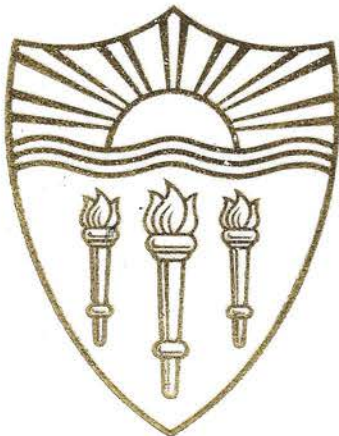
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

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Approval Date: 9/30/2015

Certificate No. C2015-98



DOI-2015.10.19

For the Foundation,

Henry W. Chang

Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.

Chief Engineer





# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 4-inch Model Deringer 40

Orientation: H

Reduced Pressure Principle (RP)

Backflow Prevention Assembly

*manufactured by*

*Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742*

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

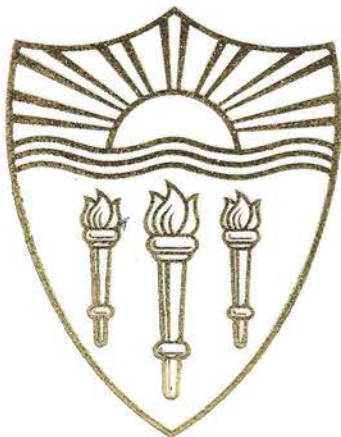
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Approval Date: 1/20/2017  
Certificate No. C2017-4

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-1/30/2017

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 4-inch Model Deringer 50  
Orientation: H

Reduced Pressure Principle - Detector Assembly Type II (RPDA-II)  
Backflow Prevention Assembly

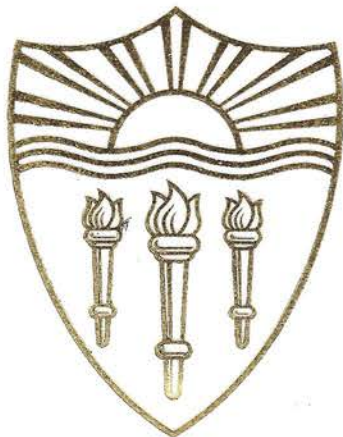
*manufactured by*

*Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742*

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

This certificate is hereby granted for a period of three (3) years from the approval date below. This certificate may be renewed subject to a review of records and/or additional evaluation requirements at the discretion of the USC Foundation for additional three-year periods. Certificates of Approval are not recalled for the purpose of updating the effective date. The revision of date is only published on the USC List of Approved Backflow Prevention Assemblies. Additional information about this backflow prevention assembly is found on the current USC List of Approved Backflow Prevention Assemblies published on the USC Foundation website ([fccchr.usc.edu](http://fccchr.usc.edu)). Approved orientations, acceptable shutoff valves and status of lead-free compliance are shown on the list of approved assemblies.

Approval Date: 1/20/2017  
Certificate No. C2017-7



For the Foundation,

Henry W. Chang  
Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.  
Chief Engineer



DOI-1/30/2017



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 6-inch Model Deringer 20X  
Orientation: H (horizontal)

Double Check Valve (DC)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

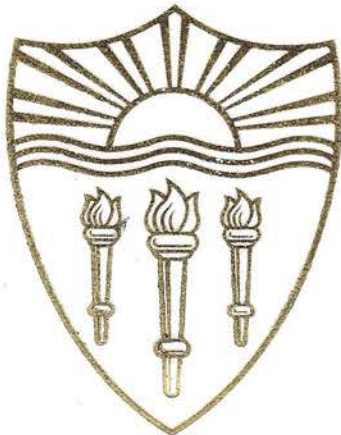
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Approval Date: 12/23/2016  
Certificate No. C2016-25

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-2016.12.29

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 6-inch Model Deringer 20X  
Orientation: VU (vertical up)

Double Check Valve (DC)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

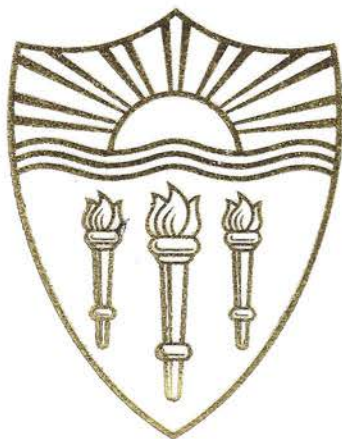
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Approval Date: 12/23/2016  
Certificate No. C2016-26

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E. ★  
Chief Engineer



DOI-2016.12.29



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 6-inch Model Deringer 30X  
Orientation: H (horizontal)

Double Check Detector Assembly Type II (DCDA-II)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

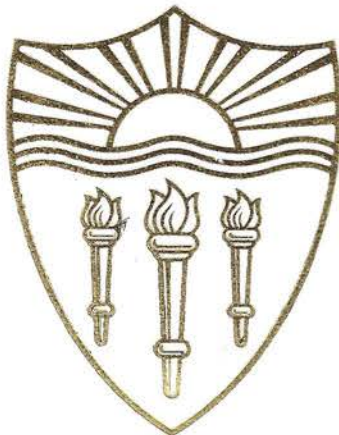
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Approval Date: 12/23/2016  
Certificate No. C2016-29

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-2016.12.29

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 6-inch Model Deringer 30X  
Orientation: VU (vertical up)

Double Check Detector Assembly Type II (DCDA-II)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

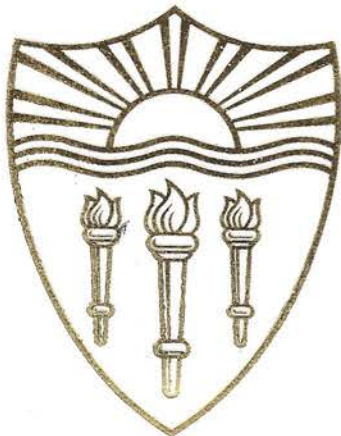
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Approval Date: 12/23/2016  
Certificate No. C2016-30

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-2016.12.29



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 6-inch Model Deringer 40X  
Orientation: H

Reduced Pressure Principle (RP)  
Backflow Prevention Assembly

*manufactured by*

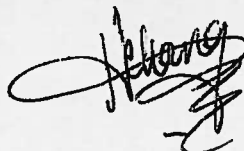
*Backflow Direct*  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

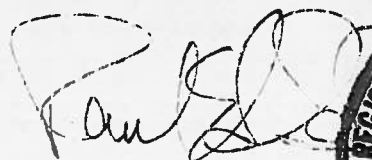
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Approval Date: 6/27/2017  
Certificate No. C2017-42

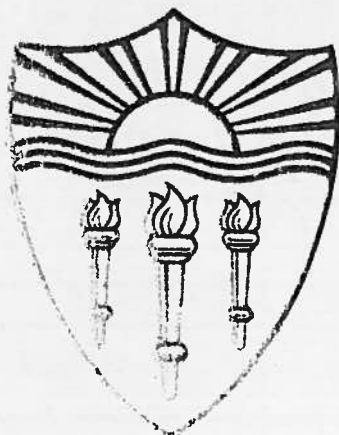
For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-1/30/2017



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 6-inch Model Deringer 50X  
Orientation: H

Reduced Pressure Principle - Detector Assembly Type II (RPDA-II)  
Backflow Prevention Assembly

*manufactured by*

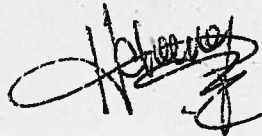
*Backflow Direct*  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

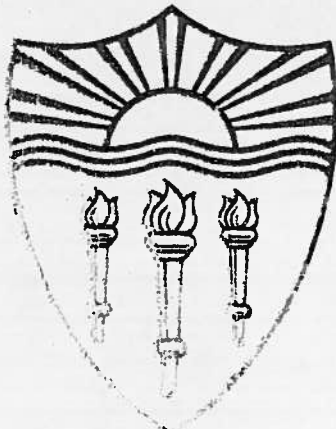
This certificate is hereby granted for a period of three (3) years from the approval date below. This certificate may be renewed subject to a review of records and/or additional evaluation requirements at the discretion of the USC Foundation for additional three-year periods. Certificates of Approval are not recalled for the purpose of updating the effective date. The revision of date is only published on the USC List of Approved Backflow Prevention Assemblies. Additional information about this backflow prevention assembly is found on the current USC List of Approved Backflow Prevention Assemblies published on the USC Foundation website ([fccchr.usc.edu](http://fccchr.usc.edu)). Approved orientations, acceptable shutoff valves and status of lead-free compliance are shown on the list of approved assemblies.

Approval Date: 6/27/2017  
Certificate No. C2017-44

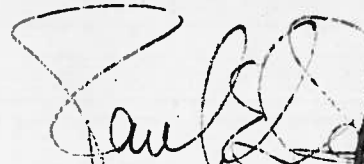
For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



DOI-1/30/2017



Paul H. Schwartz, P.E.  
Chief Engineer





# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 8-inch Model Deringer 20  
Orientation: H (horizontal)

Double Check Valve (DC)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

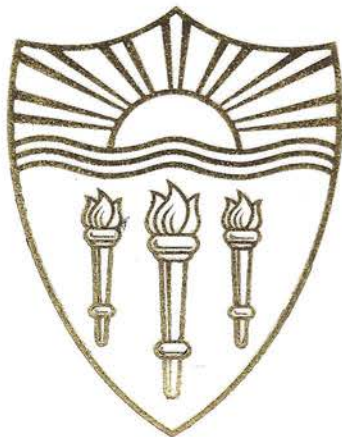
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Approval Date: 12/23/2016  
Certificate No. C2016-27

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-2016.12.29

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 8-inch Model Deringer 20  
Orientation: VU (vertical up)

Double Check Valve (DC)  
Backflow Prevention Assembly

*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

This certificate is hereby granted for a period of three (3) years from the approval date below. This certificate may be renewed subject to a review of records and/or additional evaluation requirements at the discretion of the USC Foundation for additional three-year periods. Certificates of Approval are not recalled for the purpose of updating the effective date. The revision of date is only published on the USC List of Approved Backflow Prevention Assemblies. Additional information about this backflow prevention assembly is found on the current USC List of Approved Backflow Prevention Assemblies published on the USC Foundation website ([fccchr.usc.edu](http://fccchr.usc.edu)). Approved orientations, acceptable shutoff valves and status of lead-free compliance are shown on the list of approved assemblies.

Approval Date: 12/23/2016  
Certificate No. C2016-28

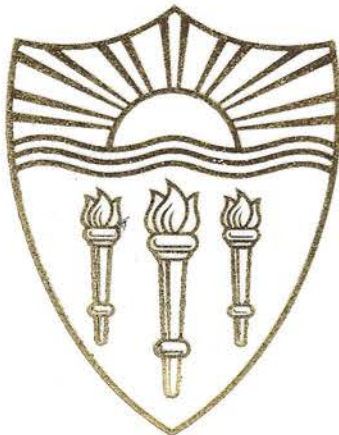
For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-2016.12.29



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 8-inch Model Deringer 30  
Orientation: H (horizontal)

Double Check Detector Assembly Type II (DCDA-II)  
Backflow Prevention Assembly

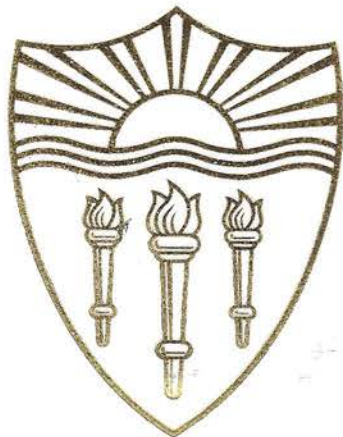
*manufactured by*

Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

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Approval Date: 12/23/2016  
Certificate No. C2016-31



For the Foundation,

Henry W. Chang  
Mechanical Engineer Program Manager

Paul H. Schwartz, P.E.  
Chief Engineer



DOI-2016.12.29

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 8-inch Model Deringer 30  
Orientation: VU (vertical up)

Double Check Detector Assembly Type II (DCDA-II)  
Backflow Prevention Assembly

*manufactured by*

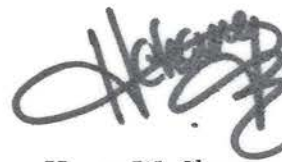
Backflow Direct  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

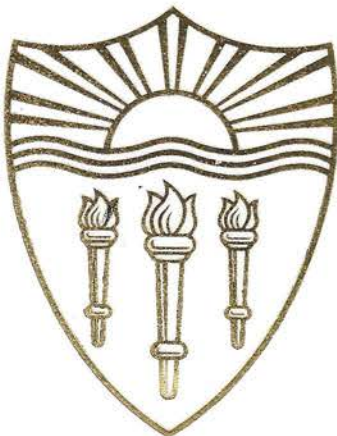
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Approval Date: 12/23/2016  
Certificate No. C2016-32

For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-2016.12.29

University of Southern California

Research Annex 219, 3716 South Hope Street, Los Angeles, CA 90089-7700 • Tel: 866 545 6340 • Fax 213 740 8399 • [fccchr@usc.edu](mailto:fccchr@usc.edu) • [fccchr.usc.edu](http://fccchr.usc.edu)



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 8-inch Model Deringer 40  
Orientation: H

Reduced Pressure Principle (RP)  
Backflow Prevention Assembly

*manufactured by*

*Backflow Direct*  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

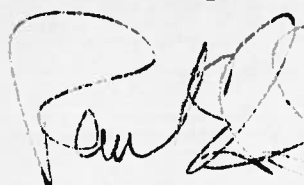
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Approval Date: 6/27/2017  
Certificate No. C2017-43

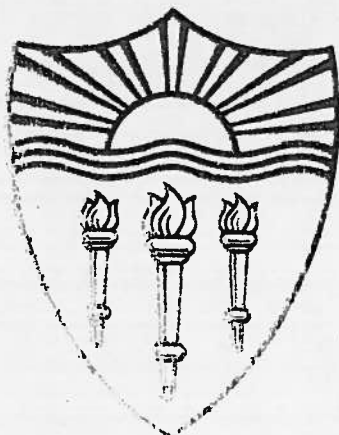
For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-1/30/2017



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

Backflow Direct 8-inch Model Deringer 50  
Orientation: H

Reduced Pressure Principle - Detector Assembly Type II (RPDA-II)  
Backflow Prevention Assembly

*manufactured by*

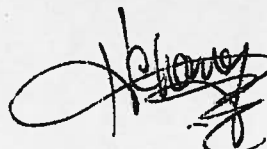
*Backflow Direct*  
3290 Monier Circle, Ste 300  
Rancho Cordova, CA 95742

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

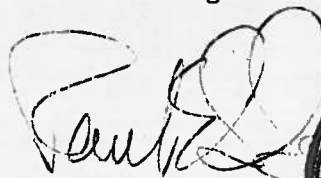
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Approval Date: 6/27/2017  
Certificate No. C2017-45

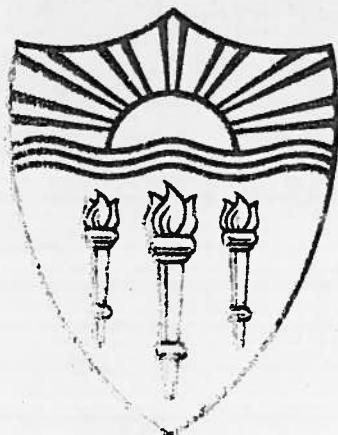
For the Foundation,



Henry W. Chang  
Mechanical Engineer Program Manager



Paul H. Schwartz, P.E.  
Chief Engineer



DOI-6/27/2017





# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 6-inch Model Deringer 40**

**Orientation: H**

**Reduced Pressure Principle (RP)**

**Backflow Prevention Assembly**

*manufactured by*

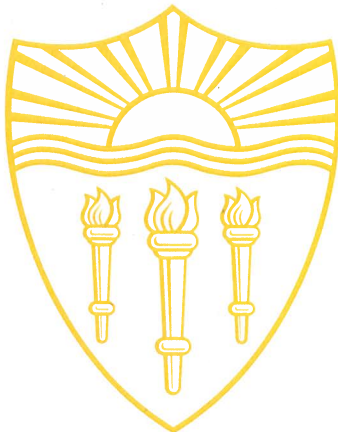
***Backflow Direct - A Watts Water Technologies Company  
815 Chestnut Street  
North Andover, MA 01845***

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

This certificate is hereby granted for a period of three (3) years from the approval date below. This certificate may be renewed subject to a review of records and/or additional evaluation requirements at the discretion of the USC Foundation for additional three-year periods. Certificates of Approval are not recalled for the purpose of updating the effective date. The revision of date is only published on the USC List of Approved Backflow Prevention Assemblies. Additional information about this backflow prevention assembly is found on the current USC List of Approved Backflow Prevention Assemblies published on the USC Foundation website ([fccchr.usc.edu](http://fccchr.usc.edu)). Approved orientations, acceptable shutoff valves and status of lead-free compliance are shown on the list of approved assemblies.

**Approval Date: 8/3/2022**

**Certificate No. C2022-21**



For the Foundation,

A blue ink signature of David A. Ritz.

David A. Ritz  
Evaluation Manager/Coordinator and  
Quality Officer

A blue ink signature of Henry W. Chang.

Henry W. Chang  
Chief Engineer and  
Program Manager

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 4-inch Model Deringer 40X**

**Orientation: H**

**Reduced Pressure Principle (RP)**

**Backflow Prevention Assembly**

*manufactured by*

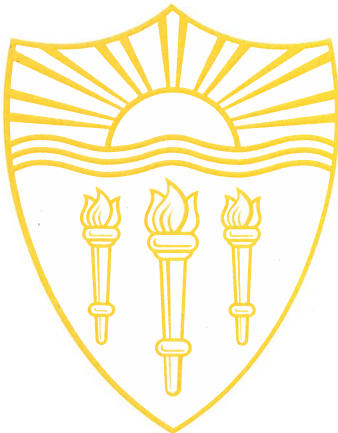
**Backflow Direct - A Watts Water Technologies Company**  
**815 Chestnut Street**  
**North Andover, MA 01845**

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

This certificate is hereby granted for a period of three (3) years from the approval date below. This certificate may be renewed subject to a review of records and/or additional evaluation requirements at the discretion of the USC Foundation for additional three-year periods. Certificates of Approval are not recalled for the purpose of updating the effective date. The revision of date is only published on the USC List of Approved Backflow Prevention Assemblies. Additional information about this backflow prevention assembly is found on the current USC List of Approved Backflow Prevention Assemblies published on the USC Foundation website ([fccchr.usc.edu](http://fccchr.usc.edu)). Approved orientations, acceptable shutoff valves and status of lead-free compliance are shown on the list of approved assemblies.

**Approval Date: 8/3/2022**

**Certificate No. C2022-22**



For the Foundation,

David A. Ritz  
Evaluation Manager/Coordinator and  
Quality Officer

Henry W. Chang  
Chief Engineer and  
Program Manager



# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 6-inch Model Deringer 50**

**Orientation: H**

**Reduced Pressure Principle - Detector Assembly Type II (RPDA-II)**

**Backflow Prevention Assembly**

*manufactured by*

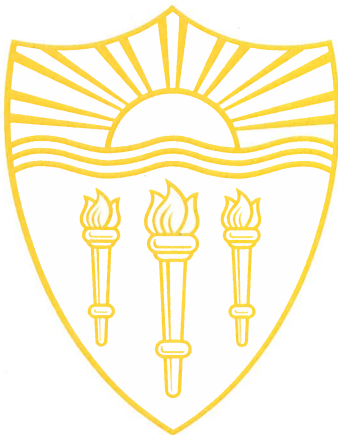
**Backflow Direct - A Watts Water Technologies Company**  
**815 Chestnut Street**  
**North Andover, MA 01845**

has satisfactorily met all design and material specifications as well as all laboratory and field evaluation requirements set forth in the 10<sup>th</sup> Edition of the Manual of Cross-Connection Control.

This certificate is hereby granted for a period of three (3) years from the approval date below. This certificate may be renewed subject to a review of records and/or additional evaluation requirements at the discretion of the USC Foundation for additional three-year periods. Certificates of Approval are not recalled for the purpose of updating the effective date. The revision of date is only published on the USC List of Approved Backflow Prevention Assemblies. Additional information about this backflow prevention assembly is found on the current USC List of Approved Backflow Prevention Assemblies published on the USC Foundation website ([fccchr.usc.edu](http://fccchr.usc.edu)). Approved orientations, acceptable shutoff valves and status of lead-free compliance are shown on the list of approved assemblies.

**Approval Date: 8/3/2022**

**Certificate No. C2022-25**



For the Foundation,

David A. Rizz  
Evaluation Manager/Coordinator and  
Quality Officer

Henry W. Chang  
Chief Engineer and  
Program Manager

# University of Southern California

Foundation for Cross-Connection Control and Hydraulic Research

## *Certificate of Approval*

*This is to certify that the*

**Backflow Direct 4-inch Model Deringer 50X**  
**Orientation: H**  
**Reduced Pressure Principle - Detector Assembly Type II (RPDA-II)**  
**Backflow Prevention Assembly**

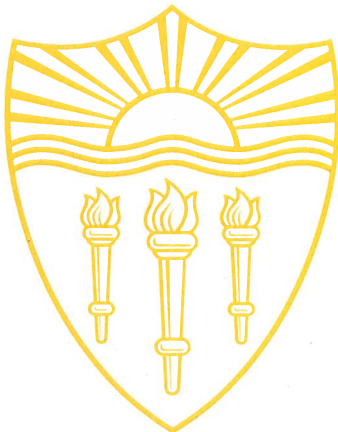
*manufactured by*

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**Approval Date: 8/3/2022**  
**Certificate No. C2022-26**



For the Foundation,

David A. Ritz  
Evaluation Manager/Coordinator and  
Quality Officer

Henry W. Chang  
Chief Engineer and  
Program Manager