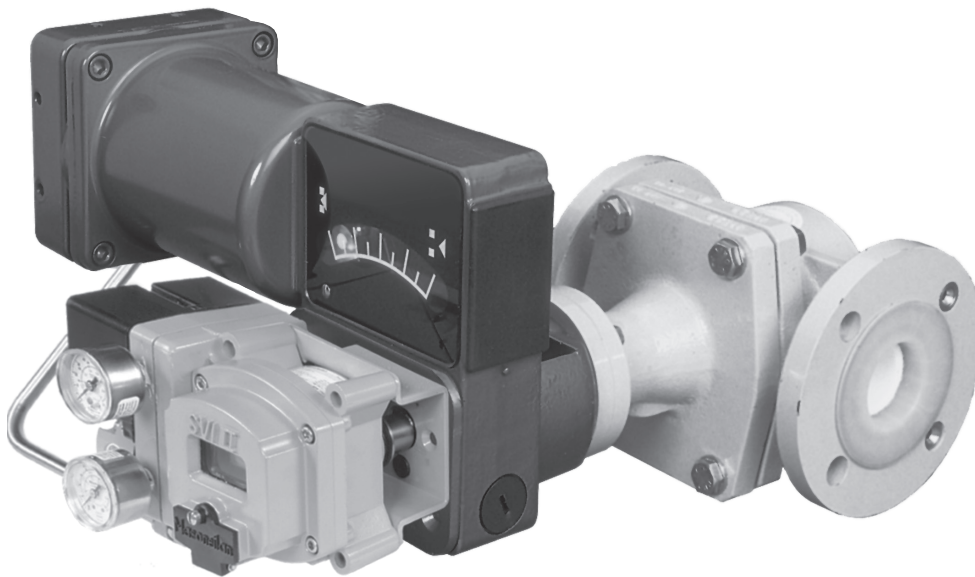


# Masoneilan\* 31000 Series

Eccentric Rotary Control Valve with PFA Liner



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# Features

The 31000 Series control valve is a PFA lined, eccentric plug control valve for corrosive applications which incorporates the following features:

## Excellent Performance

The eccentric rotary plug design provides excellent throttling control accuracy, low dynamic forces and tight shut off. The straight through flow pattern results in high flow capacities.

## Corrosion Resistance

PFA lining with guaranteed minimum wall thickness provides resistance to most corrosive fluids.

## Reduced Fugitive Emissions

The rotary design inherently reduces wear on the packing as compared to a typical linear valve. Additionally, the standard design includes PTFE/Graphite packing, chevron rings, backed-up by a double O-ring follower to provide further reliability in corrosive applications.

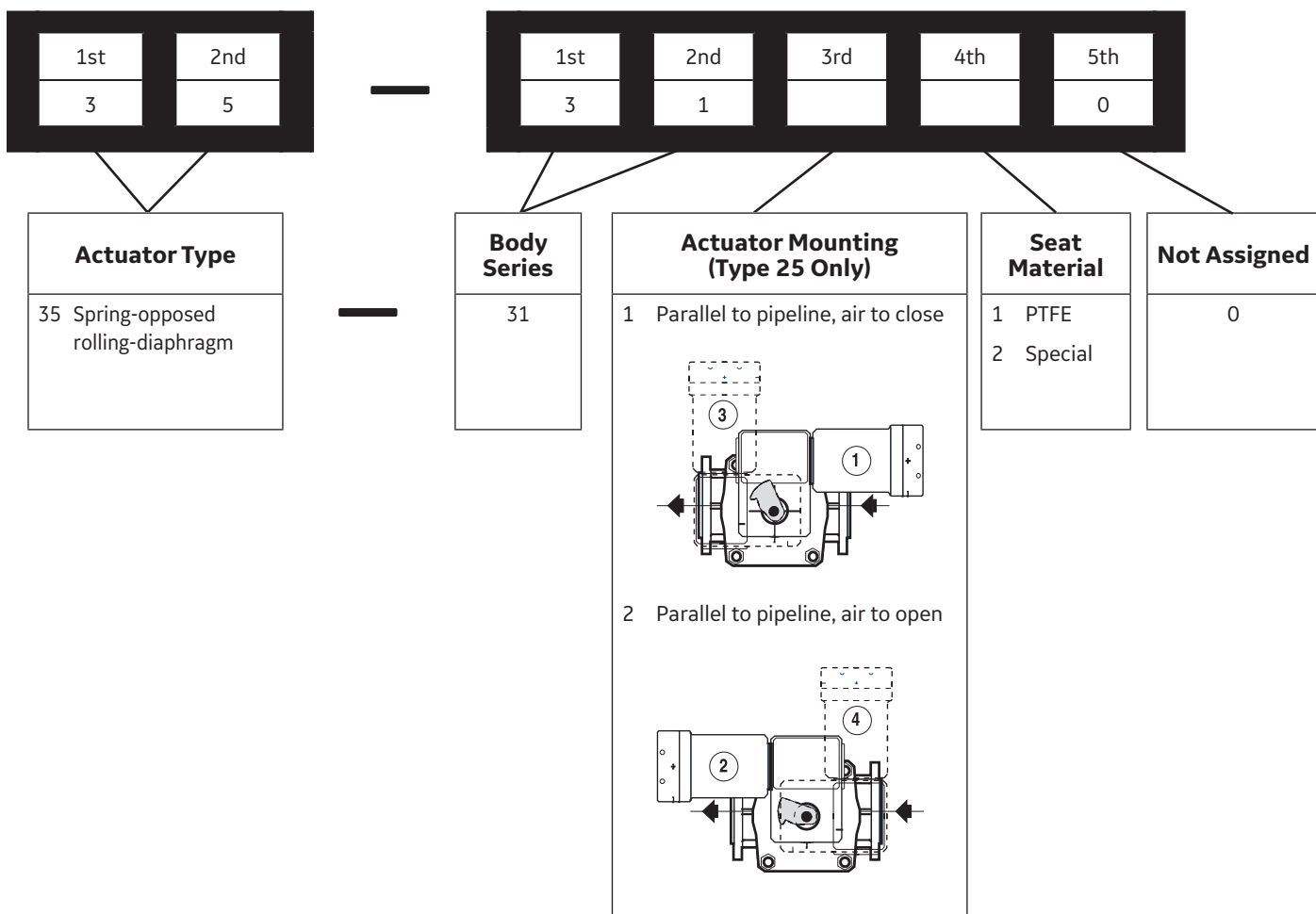
## Ease of Maintenance

The compact dimensions and low weight design allows for easy installation and removal without compromising piping forces.

## Reliability

The dovetail grooves provide mechanical anchoring between metal body and PFA lining to ensure high performance under vacuum and at high temperature. The powerful, field proven rolling diaphragm actuator provides positive fail-safe action. The actuator linkage is totally enclosed that comes with a combination handwheel and adjustable limit stop with locking mechanism. All actuators are available with a complete line of options and accessories.

# Numbering System



**Note:**

Actuator positions 1 and 2 are standard configurations. View seen from actuator end.

Other positions are available: consult BHGE.

# General Data

## Body and Bonnet

Type:	Cast, one piece, top entry, self flushing
Optional:	with steam/hotwater jacket (SJ)
Material:	Nodular ductile iron, heat treated
Lining:	PFA, translucent, melt processed
Optional:	antistatic material
Connections:	Flanged
Bonnet connection:	Through-bolted
Outside protection:	Epoxy coating

## Trim

Plug type:	Eccentrically rotating
Plug materials:	PFA coated stainless steel
Seat ring type:	Conical, sealed with O-ring
Seat ring material:	Virgin PTFE
Optional:	other materials (consult BHGE)
Optional:	PFE O-ring
Capacity:	Full capacity and reduced factor in all sizes

Flow characteristic:	Modified linear
C <sub>v</sub> ratio:	80:1
Packing:	PTFE/Graphite, chevron type rings backed up by a double O-ring follower
Optional:	leak detector or flushing connection

**Flow Direction:** Flow to close

## Actuator:<sup>1</sup>

Type:	Spring-opposed rolling-diaphragm (Model 35)
Yoke:	Cast iron
Optional:	auxiliary handwheel/limit-stop manual actuator (Model 20)

<sup>1</sup> Refer to specific actuator and accessory specification literature for complete information.

# Connections

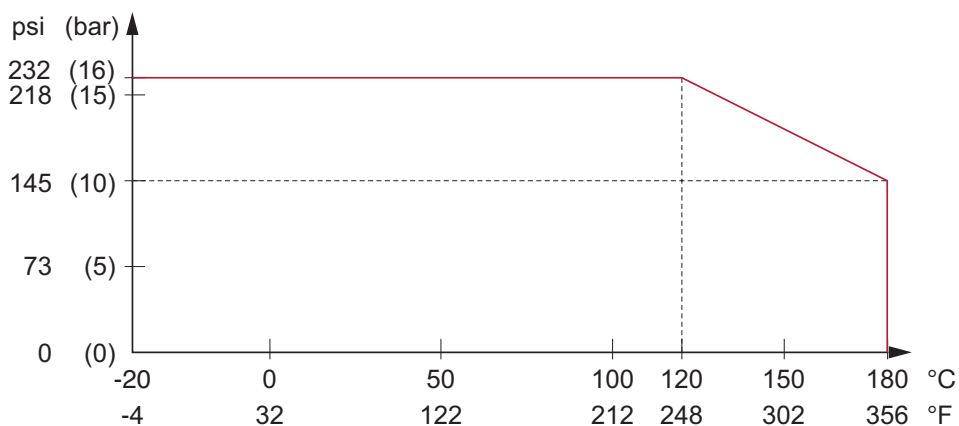
Valve Size		PN Connections		ANSI Connections	
Inches	mm	Flanges	Face to Face Dimensions	Flanges	Face to Face Dimensions
1, 2, 3	25, 50, 80	PN 10 <sup>1</sup> PN 16 (125 AARH)	IEC 534-3 <sup>2</sup> Table II	150 RF <sup>3</sup> (125 AARH)	ANSI B16.10 Globe Control Valve

<sup>1</sup> Connections according to all standard PN (ISO, EN and equivalent national standards, AFNOR, BS, DIN, etc.)

<sup>2</sup> Equivalent to DIN 3202/F1

<sup>3</sup> Connections according to ANSI B16.5

## Pressure/Temperature Rating



Vacuum operation within the same temperature range.

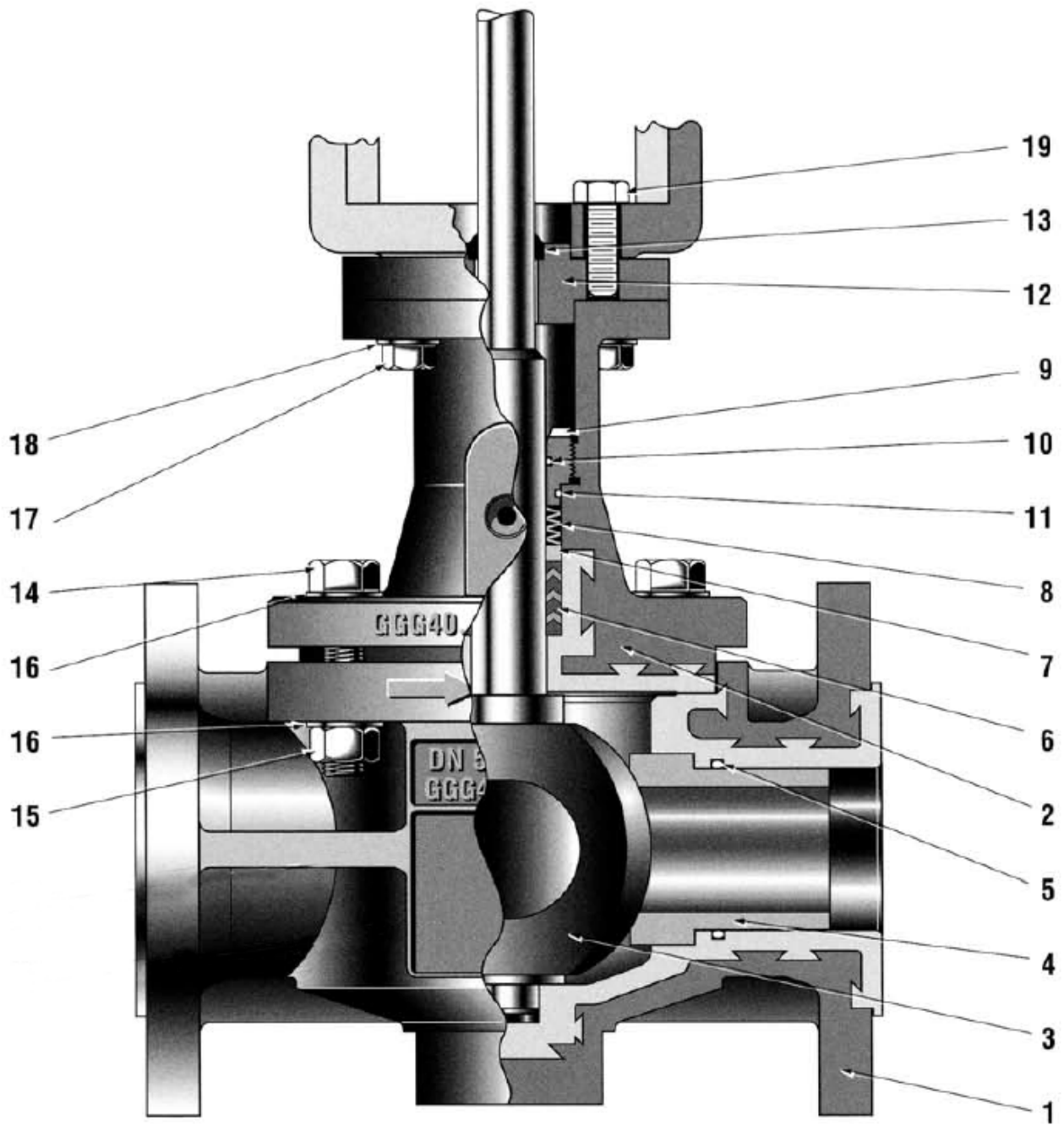
## Seat Leakage

Leakage Class VI, according to IEC 534-4 and ANSI/FCI 70.2

# C<sub>V</sub> and F<sub>L</sub>

Valve Size		Orifice Diameter	Actuator Travel	F <sub>L</sub>	C <sub>V</sub>
Inches	mm	inl (mm)	in. (mm)		
1	25	-	3.5 (89)	0.64	1.2
		-	3.5 (89)	0.64	2
		-	3.5 (89)	0.64	3
		-	3.5 (89)	0.64	4
		.394 (10)	3.5 (89)	0.64	5
		.472 (12)	3.5 (89)	0.64	8
		.669 (17)	3.5 (89)	0.64	14
		.827 (21)	3.5 (89)	0.64	20
2	50	-	3.5 (89)	0.64	10
		.945 (24)	3.5 (89)	0.64	33
		1.299 (33)	3.5 (89)	0.64	59
		1.575 (40)	3.5 (89)	0.64	82
3	80	1.732 (44)	3.5 (89)	0.64	104
		2.283 (58)	3.5 (89)	0.64	182
		3.071 (71)	3.5 (89)	0.64	260

# Materials of Construction



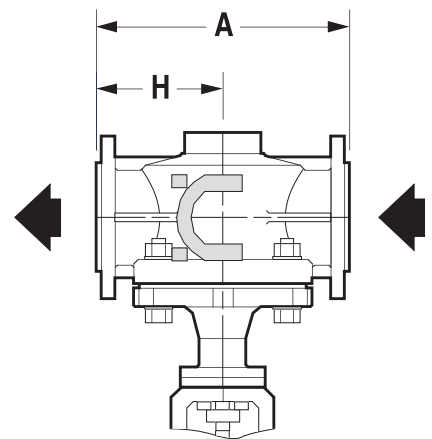
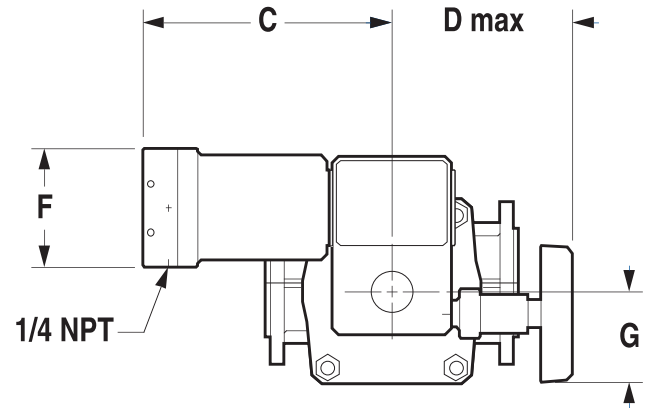
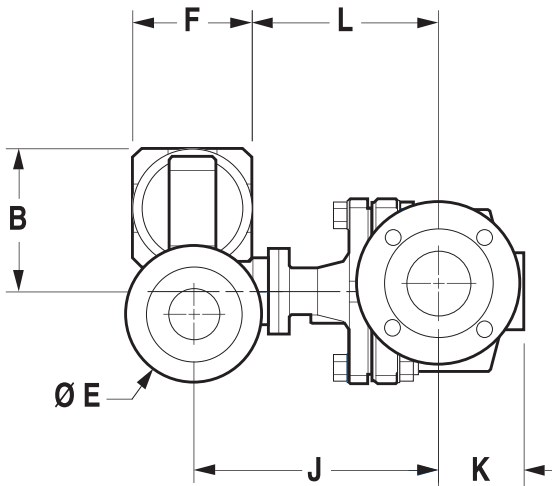
**Note:** leak detector or flushing connection is optional



# Materials of Construction

Ref. No.	Description	Standard Materials (Optional Materials)
1	Body	Ductile Iron ASTM A395/PFA Lined
2	Bonnet	Ductile Iron ASTM A395/PFA Lined
3	Plug	PFA encapsulated Stainless Steel
4	Seat Ring	Virgin Solid PTFE <i>Other Materials (Consult BHGE)</i>
5	O-Ring	FEP coated Viton® <i>Perfluoroelastomer (PFE)</i>
6	Packing	PTFE/Graphite - Chevron Ring System
7	Packing Box Ring	Stainless Steel
8	Disc Springs (Set)	Spring Steel
9	Packing Follower	Stainless Steel
10-11	O-Rings	Viton®
12	Actuator Connecting Flange	Stainless Steel
13	Wiper Ring	Neoprene
14 up to 19	Bolting	Stainless Steel

# Dimensions and Weights

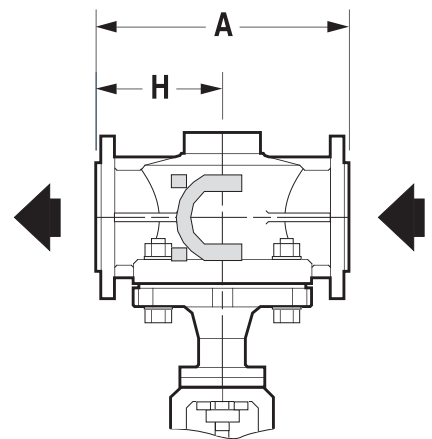
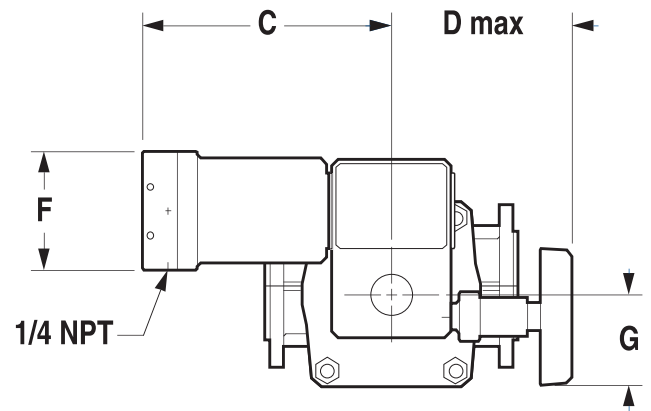
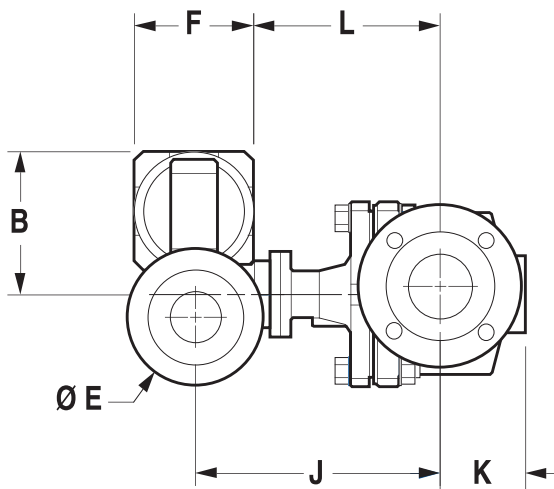


## Dimensions (inches)

Valve Size		A		B	C	D	E	F	G	H		J	K	L	Weight <sup>1</sup> (lbs)
Inch	DN	PN 10 PN 16	ANSI Class 150							PN 10 PN 16	ANSI Class 50				
1	25	6.30	7.25	6.93	11.81	8.31	6.42	5.52	4.61	3.15	3.62	10.04	2.05	7.28	40
2	50	9.06	10.00	6.93	11.81	8.31	6.42	5.52	4.61	4.53	5.00	10.63	3.07	7.87	60
3	80	12.21	11.75	6.93	11.81	8.31	6.42	5.52	4.61	6.10	5.87	11.42	3.94	8.66	97

<sup>1</sup> Including Handwheel

# Dimensions and Weights



## Dimensions (millimeters)

Valve Size		A		B	C	D	E	F	G	H		J	K	L	Weight <sup>1</sup> (kg)
Inch	DN	PN 10 PN 16	ANSI Class 150							PN 10 PN 16	ANSI Class 50				
1	25	160	184	176	300	211	163	140	117	80	92	255	52	185	18
2	50	230	254	176	300	211	163	140	117	115	127	270	78	200	27
3	80	310	298	176	300	211	163	140	117	155	149	290	100	220	44

<sup>1</sup> Including Handwheel

# DIRECT SALES OFFICE LOCATIONS

## AUSTRALIA

Brisbane:  
Phone: +61-7-3001-4319  
Fax: +61-7-3001-4399  
Perth:  
Phone: +61-8-6595-7018  
Fax: +61 8 6595-7299  
Melbourne:  
Phone: +61-3-8807-6002  
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## BELGIUM

Phone: +32-2-344-0970  
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## BRAZIL

Phone: +55-19-2104-6900

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## ITALY

Phone: +39-081-7892-111  
Fax: +39-081-7892-208

## JAPAN

Tokyo  
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Fax: +81-03-6890-4620

## KOREA

Phone: +82-2-2274-0748  
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Phone: +60-3-2161-0322  
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## THE NETHERLANDS

Phone: +31-15-3808666  
Fax: +31-18-1641438

## RUSSIA

Veliky Novgorod  
Phone: +7-8162-55-7898  
Fax: +7-8162-55-7921  
Moscow  
Phone: +7 495-585-1276  
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## SAUDI ARABIA

Phone: +966-3-341-0278  
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## SINGAPORE

Phone: +65-6861-6100  
Fax: +65-6861-7172

## SOUTH AFRICA

Phone: +27-11-452-1550  
Fax: +27-11-452-6542

## SOUTH & CENTRAL AMERICA AND THE CARIBBEAN

Phone: +55-12-2134-1201  
Fax: +55-12-2134-1238

## SPAIN

Phone: +34-93-652-6430  
Fax: +34-93-652-6444

## UNITED ARAB EMIRATES

Phone: +971-4-8991-777  
Fax: +971-4-8991-778

## UNITED KINGDOM

Bracknell  
Phone: +44-1344-460-500  
Fax: +44-1344-460-537

## Skelmersdale

Phone: +44-1695-526-00  
Fax: +44-1695-526-01

## UNITED STATES

Jacksonville, Florida  
Phone: +1-904-570-3409

## Corpus Christi, Texas

Phone: +1-361-881-8182  
Fax: +1-361-881-8246  
Deer Park, Texas  
Phone: +1-281-884-1000  
Fax: +1-281-884-1010

## Houston, Texas

Phone: +1-281-671-1640  
Fax: +1-281-671-1735

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