



GOYEN

BLOWTUBE NOZZLES AND CARTRIDGE CLEANING CONES

PENTAIR CLEAN AIR SYSTEMS

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GOCO FILTER CLEANING OPTIMISATION IN SECONDS!

ABOUT PENTAIR ENVIRONMENTAL SYSTEMS

With over 78 years experience, Pentair Environmental Systems with the product brands Goyen and Mecair have provided engineering partnerships since 1935 to some of the world's largest leading industries. These valued partnerships service the power generation, cement, steel, general manufacturing and bulk solids handling industries.

The Pentair Environmental Systems brand Goyen is a world-class leader in quality products through design leadership by providing value to our customers through customer beneficial partnerships.

Our customers are supported by our world-class engineering expertise, innovative designs, high-quality and industry-leading products in the filter cleaning systems solutions market, including diaphragm vales, header tanks, cleaning systems components, pulse cleaning controllers, emissions monitoring and Tribo electric products.

Goyen and Mecair's advanced application expertise, along with our wide product range and global reach, has allowed us to maintain our valuable, long-term customer partnerships through ongoing customer support.

Engineering partnerships since 1935



VNA25C-50



VNA25C-100



VNA45C-50



VNA45C-100



VN-45-PC-50



VN-25-PC-50

GOCO FILTER CLEANING OPTIMISATION IN SECONDS!

GOCO is your filter cleaning system software design tool. GOCO encapsulates decades of filter cleaning expertise and delivers it into your particulate filter system design on demand.

GOCO. YOUR COMPETITIVE ADVANTAGE

We support this process through GOCO, consultation and additional performance testing and modelling using computational fluid dynamics.

ELIMINATE RISK

- Make the system more robust against changing dust loads.
- Reduce risk of system failure.

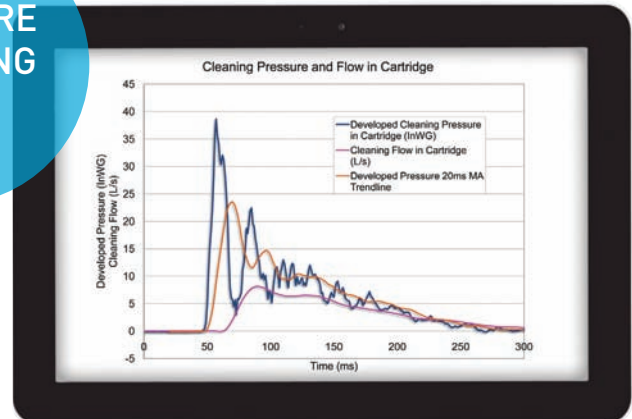
MINIMISE OPERATING COSTS

- Reduce compressor demand.
- Pulse noise reduction.
- Optimise filter cleaning operation.

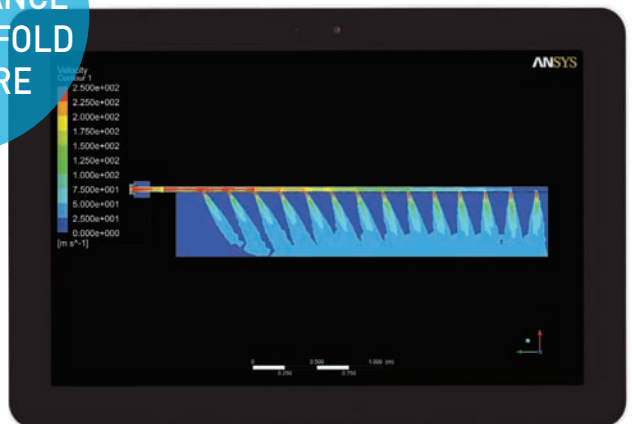
INCREASE FILTER LIFE

- Improve scrubbing efficiency.
- Reduce pulse rate to clean filters on dP.
- Increase filter life – reduce maintenance frequency.

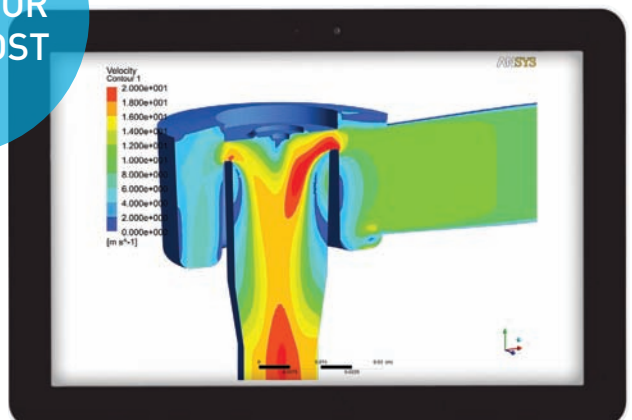
30% MORE
CLEANING
FLOW



COLLECTOR
PERFORMANCE
-30% MANIFOLD
PRESSURE



REDUCING
COLLECTOR
BUILD COST



GOYEN GOCO NOZZLE PLC

(1" AND 1.5" PIPE)



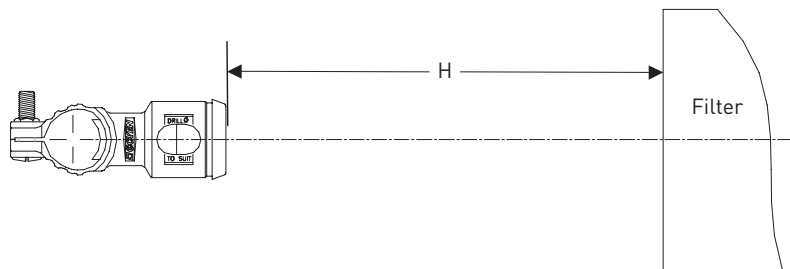
VN-25-PC-50



VN-45-PC-50

INSTALLATION

For best performance, $H=(\varnothing \text{ Filter} - 48)/0.353$ [mm] or $H=(\varnothing \text{ Filter} - 1.88)/0.353$ [inches]. Prepare $\varnothing 22$ mm ($\varnothing 0.866$ ") hole in the blowtube for VN-25PC-50 and prepare $\varnothing 26$ mm ($\varnothing 1.023$ ") hole in the blowtube for VN-45PC-50.



DIMENSIONS

(Dimensions in mm and [inches])

MODEL	A	B	Ø
VN25PC-50	110 mm [4.33"]	76 mm [3.00"]	33 mm [1.32"]
VN45PC-50	126 mm [4.97"]	84 mm [3.29"]	48 mm [1.90"]

Nozzles must be drilled to required orifice size before installation. Ensure O-ring is in place when fitting nozzle to pipe.

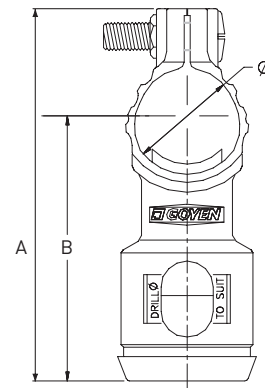
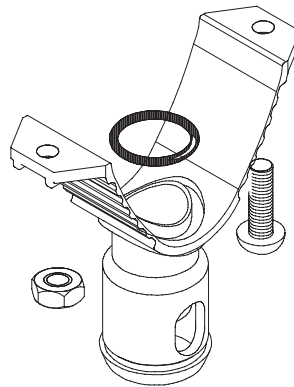
DESCRIPTION

Goyen's range of plastic nozzles measurably increase developed pressures in filters during reverse pulsecleaning by balancing the flow through all holes along the blowtube, ensuring that the pulse jet is directed fully into the filters, and minimising the pressure drop through the blowtube holes. Goyen's nozzles ensure effective cleaning is achieved at A_n/A_p (total blowtube hole area/ blowtube cross-sectional area) values up to 1.5, extracting maximum pulse performance from the diaphragm valves. Typical systems not using the GOCO nozzle perform at 0.5 to 0.8.

SUITABLE FOR

1" and 1.5" pipe diameters in reverse pulse jet filter cleaning applications and its variations including bag filters and cartridge filters. Plastic nozzles are not suitable for high ambient temperature applications above 80°C [176°F].

* Please Note: Not intended for use in Gas Turbine applications.



ORDER CODE AND CHARACTERISTICS

ORDER CODE	VN-25-PC-50	VN-45-PC-50
Suitable for pipe Ø	1" (Schedule 40)	1.5" (Schedule 40)
Nominal pipe external Ø mm [inches]	33 [1.32]	48 [1.90]
Temperature range °C [°F]	-40 [-40] to 80 [176]	-40 [-40] to 80 [176]
Material	PA-6	PA-6
Unit mass kg [lb]	0.060 [0.13]	0.065 [0.14]
Pipe hole Ø to accept nozzle mm [inches]	22.0 [0.866]	26.0 [1.023]

Nozzle sizes can be optimised using Goyen's GOCO software. Contact your local Goyen representative.

GOYEN GOCO NOZZLE SCREW IN

[3/4" AND 1" PIPE]

DESCRIPTION

Goyen's range of plastic screw-in nozzles measurably increase developed pressures in filters during reverse pulse cleaning by balancing the flow through all holes along the blowtube, ensuring that the pulse jet is directed fully into the filters, and minimising the pressure drop through the blowtube holes.

Goyen's nozzles ensure effective cleaning is achieved at An/Ap (total blowtube hole area/blowtube cross-sectional area) values up to 1.5, extracting maximum pulse performance from the diaphragm valves. Systems not using the Goco nozzle perform at 0.5 to 0.8.

SUITABLE FOR

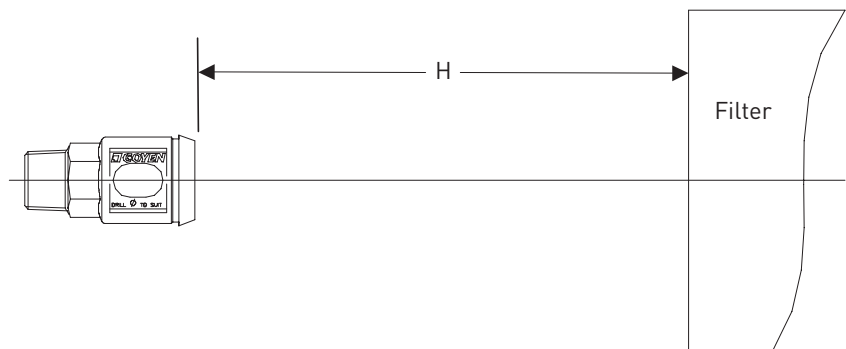
3/4" and 1" pipe diameters in reverse pulse jet filter cleaning applications and its variations including bag filters and cartridge filters.

Plastic nozzles are not suitable for high ambient temperature applications above 80°C (176°F). These nozzles are designed to be screwed directly into the threaded outlet of a 'T' series dust collector valve, or into threaded sockets welded to blowtubes.

* Please Note: Not intended for use in Gas Turbine applications.

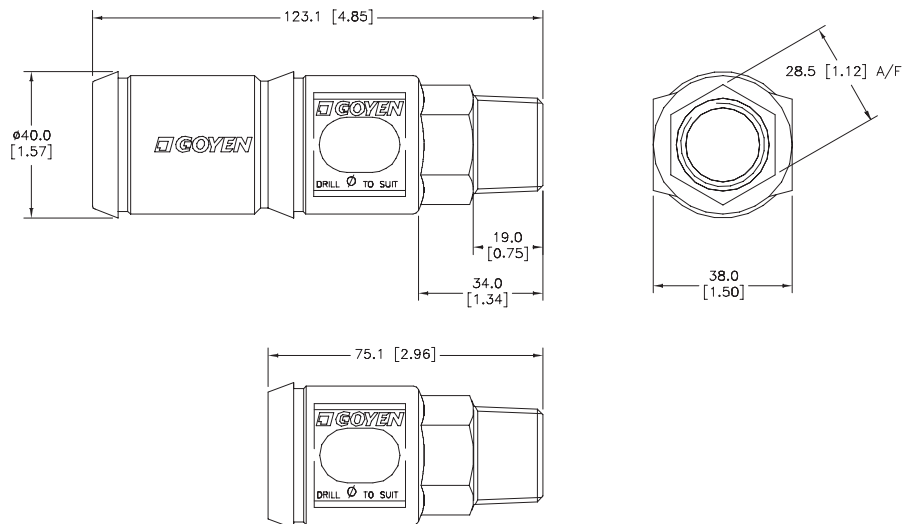
INSTALLATION

For best performance, $H=(\emptyset \text{ Filter} - 48)/0.353$ (mm) or $H=(\emptyset \text{ Filter} - 1.88)/0.353$ (inches). Nozzles must be drilled to appropriate orifice size before installation.



DIMENSIONS

(Dimensions in mm and [inches])



ORDER CODE AND CHARACTERISTICS

ORDER CODE	CONNECTION SIZE mm (inches)	THREAD TYPE	BARREL LENGTH mm (inches)	UNIT MASS kg (lb)	MATERIAL	TEMPERATURE RATING °C (°F)
VN20SPN-50	20 (3/4)	NPT	56 (2.2)	0.040 (0.09)	PA-6	-40 [-40] to 80 (176)
VN20SPR-50	20 (3/4)	R	56 (2.2)	0.040 (0.09)	PA-6	-40 [-40] to 80 (176)
VN20SPN-100	20 (3/4)	NPT	104 (4.1)	0.065 (0.14)	PA-6	-40 [-40] to 80 (176)
VN20SPR-100	20 (3/4)	R	104 (4.1)	0.065 (0.14)	PA-6	-40 [-40] to 80 (176)
VN25SPN-50	25 (1)	NPT	56 (2.2)	0.040 (0.09)	PA-6	-40 [-40] to 80 (176)
VN25SPR-50	25 (1)	R	56 (2.2)	0.040 (0.09)	PA-6	-40 [-40] to 80 (176)
VN25SPN-100	25 (1)	NPT	104 (4.1)	0.065 (0.14)	PA-6	-40 [-40] to 80 (176)
VN25SPR-100	25 (1)	R	104 (4.1)	0.065 (0.14)	PA-6	-40 [-40] to 80 (176)

Nozzle sizes can be optimised using Goyen's GOCO software. Contact your local Goyen representative.

GOYEN GOCO NOZZLE [ALUMINIUM]

(1" AND 1.5" PIPE)



VNA25C-50



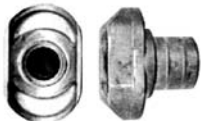
VNA25C-100



VNA45C-50



VNA45C-100



AL25-B, AL25-BD#,
AL45-B, AL45-BD#



REG-#

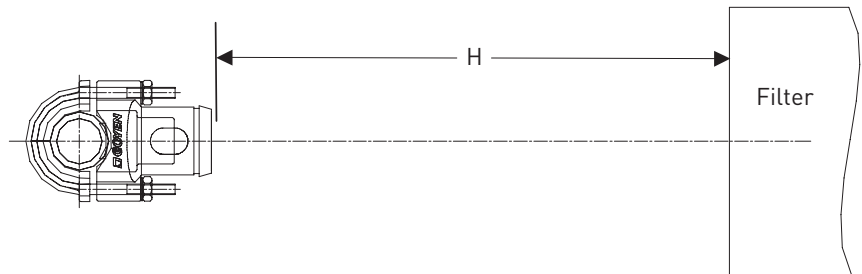
SUITABLE FOR

1" and 1.5" pipe diameters in reverse pulse jet filter cleaning applications and its variations including bag filters, cartridge filters, ceramic filters, and sintered metal fibre filters.

* Please Note: Not intended for use in Gas Turbine applications.

INSTALLATION

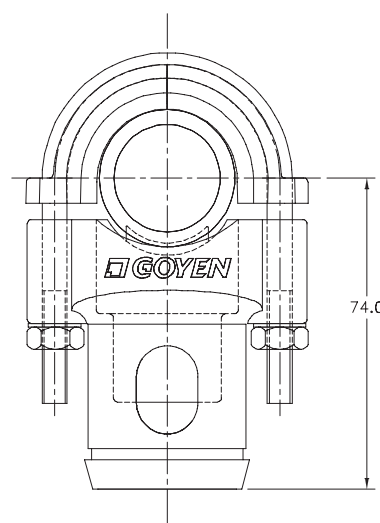
For best performance, $H=(\varnothing \text{ Filter} - 48)/0.353$ (mm) or $H=(\varnothing \text{ Filter} - 1.88)/0.353$ (inches). Prepare $\varnothing 20-21$ mm ($\varnothing 0.78-0.83$ " hole in the blowtube for VNA-25C and prepare $\varnothing 27-28$ mm ($\varnothing 1.06-1.10$ " hole in the blowtube for VNA-45C.



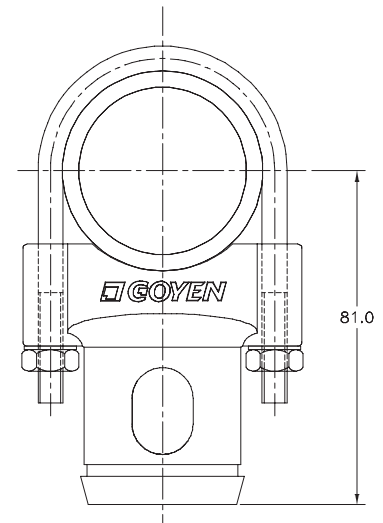
DIMENSIONS

[Dimensions in mm and [inches]]

ITEM	MASS kg (lb)	ITEM	MASS. kg (lb)
VNA25C-50	0.175 (0.366)	VNA25C-100	0.220 (0.485)
VNA45C-50	0.160 (0.353)	VNA45C-100	0.205 (0.452)
AL25-B/BD# & AL45-B/BD#	0.055 (0.121)	REG-#	0.020 (0.044)



VNA25C-50
To suit 1" schedule 40 pipe.



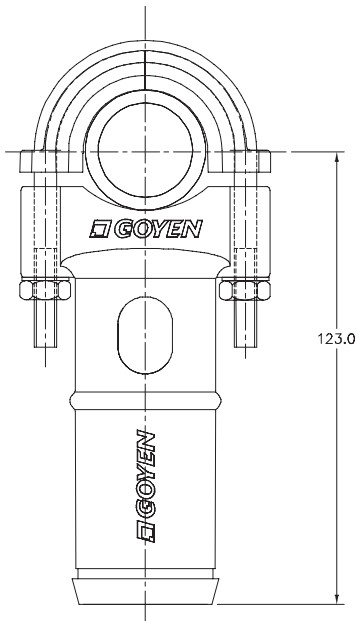
VNA45C-50
To suit 1.5" schedule 40 pipe.

DESCRIPTION

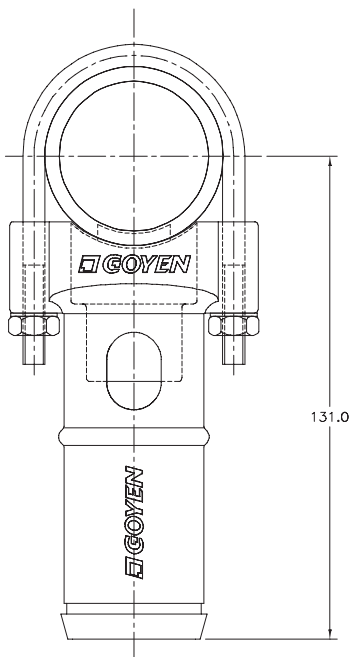
Goyen's range of nozzles measurably increase developed pressures in filters during reverse pulse cleaning by balancing the flow through all holes along the blowtube, ensuring that the pulse jet is directed fully into the filters, and minimising the pressure drop through the blowtube holes. Goyen's nozzles ensure effective cleaning is achieved at An/Ap (total blowtube hole area/blowtube cross-sectional area) values up to 1.5, extracting maximum pulse performance from the diaphragm valves. Typical systems not using the Goco nozzle perform at 0.5 to 0.8.

GOYEN GOCO NOZZLE [ALUMINIUM]

(1" AND 1.5" PIPE)



VNA25C-100
To suit 1" schedule 40 pipe.



VNA45C-100
To suit 1.5" schedule 40 pipe.

ORDER CODE AND CHARACTERISTICS

Diecast Nozzles

CODE	DESCRIPTION	MATERIAL
VNA25C-50	Diecast venturi nozzle assembly to suit 1" pipe, short barrel.	Body and saddle: diecast aluminium Clamp, nuts & washers: nickel-plated mild steel
VNA25C-100	Diecast venturi nozzle assembly to suit 1" pipe, long barrel.	Body and saddle: diecast aluminium Clamp, nuts & washers: nickel-plated mild steel
VNA45C-50	Diecast venturi nozzle assembly to suit 1.5" pipe, short barrel.	Body and saddle: diecast aluminium Clamp, nuts & washers: nickel-plated mild steel
VNA45C-100	Diecast venturi nozzle assembly to suit 1.5" pipe, long barrel.	Body and saddle: diecast aluminium Clamp, nuts & washers: nickel-plated mild steel

Nozzle Inserts

CODE	DESCRIPTION	MATERIAL	TEMPERATURE RANGES °C (°F)
AL25-BD#	Diecast nozzle insert to suit VNA25 series. Insert orifice must be drilled by the customer suiting the application and will be supplied with Ø4 mm nominal hole. No seals required.	Diecast aluminium	-60 (-76) to 400 (752)
AL45-BD#	Diecast nozzle insert to suit VNA45 series. Insert orifice must be drilled by the customer suiting the application and will be supplied with Ø4 mm nominal hole. No seals required.	Diecast aluminium	-60 (-76) to 400 (752)
REG-#	Plastic nozzle insert with rubber seal. Suits both VNA25 and VNA45 series. (#=4 mm to 22 mm)	Insert: PA-6 30% glass filled. Seal: Nitrile	-40 (-40) to 80 (176)

To order specify nozzle and nozzle insert codes separately.

For example: VNA25C-50 and REG-14 for a short nozzle to suit a 1" pipe with a 14 mm plastic insert.

VNA45C-100 and AL45-BD10 for a long nozzle to suit a 1.5" pipe with a 10 mm aluminium insert.

Nozzle sizes can be optimised using Goyen's GOCO software. Contact your local Goyen representative.

GOYEN GOCO NOZZLE [STRAPLESS]

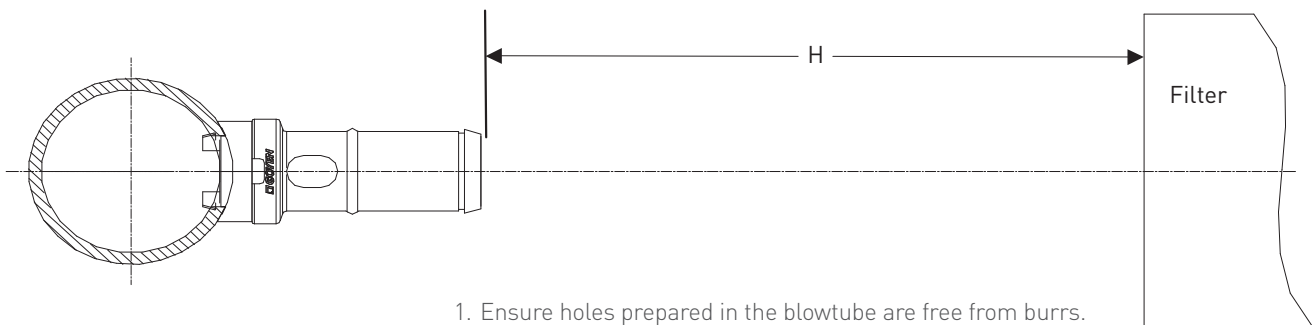
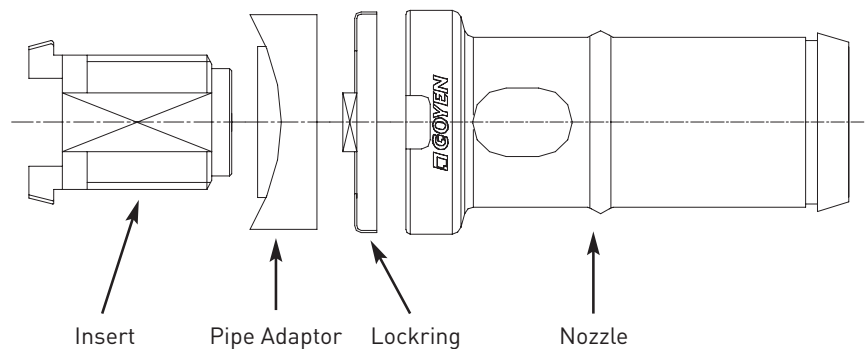
[2", 2.5", 3" AND 4" PIPE]

DESCRIPTION

Goyen's range of nozzles measurably increase developed pressures in filters during reverse pulse cleaning by balancing the flow through all holes along the blowtube, ensuring that the pulse jet is directed fully into the filters, and minimising the pressure drop through the blowtube holes. Goyen's nozzles ensure effective cleaning is achieved at A_n/A_p (total blowtube hole area/blowtube cross-sectional area) values up to 1.5, extracting maximum pulse performance from the diaphragm valves. Typical systems not using the Goco nozzle perform at 0.5 to 0.8.

INSTALLATION

For best performance, $H=(\varnothing \text{ Filter} - 48)/0.353$ (mm) or $H=(\varnothing \text{ Filter} - 1.88)/0.353$ (inches). Prepare $\varnothing 34.1-34.5$ mm ($\varnothing 1.34-1.36$ "") holes in the blowtube.



SUITABLE FOR

2", 2.5", 3" and 4" schedule 40 pipe diameters as used in reverse pulse jet filter cleaning applications and its variations including bag filters, cartridge filters, ceramic filters, and sintered metal fibre filters.

* Please Note: Not intended for use in Gas Turbine applications.

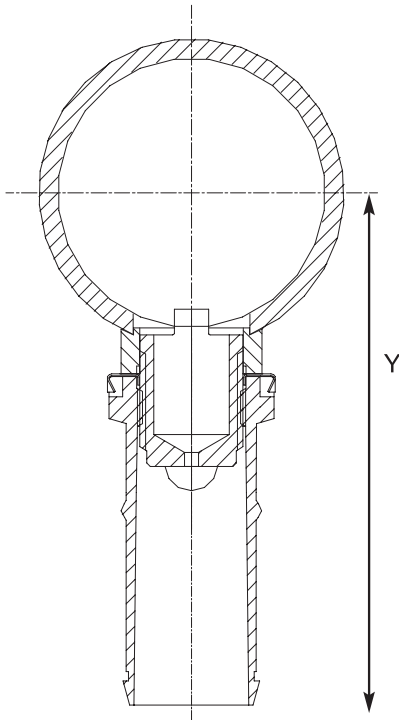
1. Ensure holes prepared in the blowtube are free from burrs.
2. Assemble the insert into nozzle passing through the pipe adaptor and locking as illustrated above. Only screw the insert part way into the nozzle.
3. Align the insert lugs along the axis of the blowtube, and hook one lug into the blowtube
4. Swing the second lug up into the blowtube and slide the pipe adaptor up and onto the blowtube hole.
5. Screw the nozzle up onto the insert, checking that all components are aligned. Hand tight is sufficient.
6. Dent the locking into one or both of the nozzle cavities; this will ensure the assembly is permanently locked in place. To remove the nozzle, bend the dent out using a screwdriver blade.

(For detailed installation instructions, refer to DEINC-018 VNA.)



GOYEN GOCO NOZZLE [STRAPLESS]

[2", 2.5", 3" AND 4" PIPE]



DIMENSIONS

(Dimensions in mm and [inches])

ITEM	MASS kg (lb)	ITEM	MASS kg (lb)
VNA50I-50	0.115 (0.254)	VNA50I-100	0.205 (0.452)
VNA62I-50	0.115 (0.254)	VNA62I-100	0.205 (0.452)
VNA76I-50	0.115 (0.254)	VNA76I-100	0.205 (0.452)
VNA102I-50	0.115 (0.254)	VNA102I-100	0.205 (0.452)
ORDER CODE	Y mm (inches)	ORDER CODE	Y mm (inches)
VNA50I-50	88 [3.46]	VNA50I-100	138 [5.43]
VNA62I-50	94 [3.71]	VNA62I-100	145 [5.68]
VNA76I-50	102 [4.03]	VNA76I-100	152 [6.00]
VNA102I-50	115 [4.53]	VNA102I-100	165 [6.50]

ORDER CODE AND CHARACTERISTICS

Diecast Nozzles

CODE	SCHEDULE 40 PIPE (inches)	DESCRIPTION	MATERIAL	TEMPERATURE RANGE °C (°F)
VNA50I-50	2	Short barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)
VNA62I-50	2.5	Short barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)
VNA76I-50	3	Short barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)
VNA102I-50	4	Short barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)
VNA50I-100	2	Long barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)
VNA62I-100	2.5	Long barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)
VNA76I-100	3	Long barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)
VNA102I-100	4	Long barrel	Diecast aluminium & galvanised steel (lockring)	-60 (-76) – 400 (752)

Note that assemblies include nozzle, pipe adaptor, nozzle insert and lockring.

Nozzle inserts must be drilled to required orifice size.

Nozzle sizes can be optimised using Goyen's GOCO software. Contact your local Goyen representative

GOYEN CARTRIDGE CLEANING CONES



CC 100



CC 150



CC 200

DESCRIPTION

Goyen's Cartridge Cleaning Cone attaches to the Goyen GOCO nozzle system. This product optimises the cleaning pulse in cartridge filter applications by ensuring that the developed pressure in the filter is even along the entire length of the filter element.

SUITABLE FOR

Cartridge and pleated filter elements used in reverse pulse jet dust collectors. Suitable for filter elements with internal diameter of 60 mm [2.4"] or larger. The Cartridge Cleaning Cone may be assembled to any of the Goyen range of GOCO nozzles.

Note: Not intended for use in gas turbine applications.

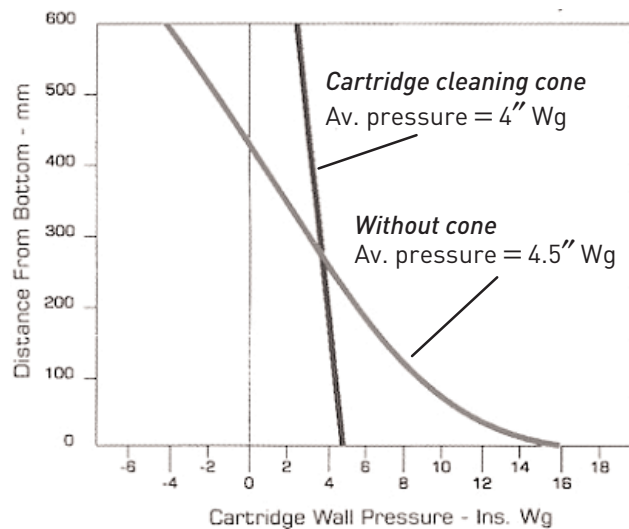
PERFORMANCE

As illustrated above for a typical system, the Cartridge Cleaning Cone ensures that the developed overpressure is even along the entire length of the filter element. The average developed pressure is nearly equal to the system without.

Note that in this case, the system without the attachment is unable to overcome the normal filter differential pressure near the top of the filter. Massive over pressure is developed at the bottom of the filter. The effects of this include blinding of significant filter area and damage to the filter membrane – poor filtration performance and reduced filter life.

Graphic shown is for internal Ø 240 mm, external Ø 350 mm cartridge filter 600 mm long operating at a pressure drop of 4" Wg. System pulse pressure is 413 kPa (60 psi). No venturi used on cartridge element. CC200 used.

Nozzle sizes can be optimised using Goyen's GOCO software. Contact your local Goyen representative.



GOYEN CARTRIDGE CLEANING CONES

INSTALLATION

When installing into baghouse, the end of the cone should lie between 30 and 80 mm (1.13" and 3.14") from the filter opening.



Note the profile of the four legs of the cone



Snap the clip into position over the four legs



Note the profile at the end of the nozzle



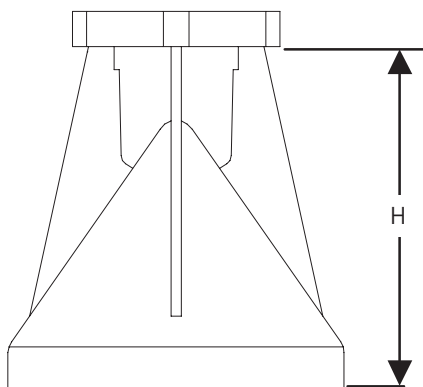
Snap cone assembly into position over the nozzle outlet

DIMENSIONS

(Dimensions in mm and [inches])

To calculate total assembly height when mounted to a Goco nozzle, add H to the total nozzle length. Refer to relevant nozzle product specification.

	CC100 mm (inches)	CC150 mm (inches)	CC200 mm (inches)
H	33 (1.30)	77 (3.03)	102 (4.02)



ORDER CODE AND CHARACTERISTICS

ORDER CODE	SUITABLE FILTER (INTERNAL) Ø IN mm (inches)	MATERIAL (CONE AND CLIP)	UNIT MASS kg (lbs)	TEMPERATURE RANGE °C (°F)
CC 100	60 – 100 (2.4 – 3.9)	30% glass filled PA-6	0.03 (0.066)	-40 (-40) to 80 (176)
CC 150	100 – 175 (3.9 – 6.9)	30% glass filled PA-6	0.07 (0.154)	-40 (-40) to 80 (176)
CC 200	Larger than 175 (6.9)	30% glass filled PA-6	0.13 (0.287)	-40 (-40) to 80 (176)

Note that assemblies include cone and clip.



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Goyen Blowtube Nozzles & Cartridge Cleaning Cones Rev02 11/14