

# The Green Machines Offering





# The Breadth of Tennant's Offering

# Breadth of Tennant's Offering



# Scrubbers too...



# Broom vs Air Technology



# Broom vs Air Sweepers

## What Differentiates the Technologies



	Broom Technology	Air Technology
Debris Conveyance	Broom	Air
Means of Dust Control	Air/Filter	Water/Screens
Location of Pick-Up	Mid	Front (non-truck)
Location of Dump	Front (most)	Rear
Wear Items	Main & Side Brooms Skirts	Sweeping Brushes Skids
Maintenance	Filters	Vac Head Glide (urethane)
Clean-Up	Water Used?	Water MUST be Used
Size	Tend to be Wider	Tend to be Longer



# Broom vs Air Sweepers

## Debris Capabilities



		Broom Technology	Air Technology
Heavy	Industrial Debris	Best	Not Recommended
	Sand	Best	Light
	Industrial Dust	Best	Not Recommended
Light	Street Dust	Yes, Dry/Wet	Yes, Wet
	Litter	Light	Best
	Bottles and Cans	Okay	Best
	Pine Needles/Leaves	Light	Best*

\* Limited Capacity

# The Compelling Value

Of the Green Machines Offering



# Compelling Value

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## Model 400 Series

- Proven Concept - 40 Year Evolution
- Designed with the operator in mind
- Exceptional Maneuverability
- Debris Compaction
- Pedestrian Friendly Curb Appeal

## Model 636

- Designed with the operator and mechanic in mind
- Superior Dust Control for an Air Machine
- 1<sup>st</sup> Class Construction
- Industry Leading Productivity
- People Friendly Curb Appeal

# Operator Centered Design

Why is it important?

- Why is it important?
  - Less Fatigue
  - More Productive
  - Reduced Employee Turnover and training
  - Improved Morale
  - Equipment Utilization
  - Operators can't sign PO, but they can block it...

# Operator Centered Design

What features support it?

## Incredible Sightlines

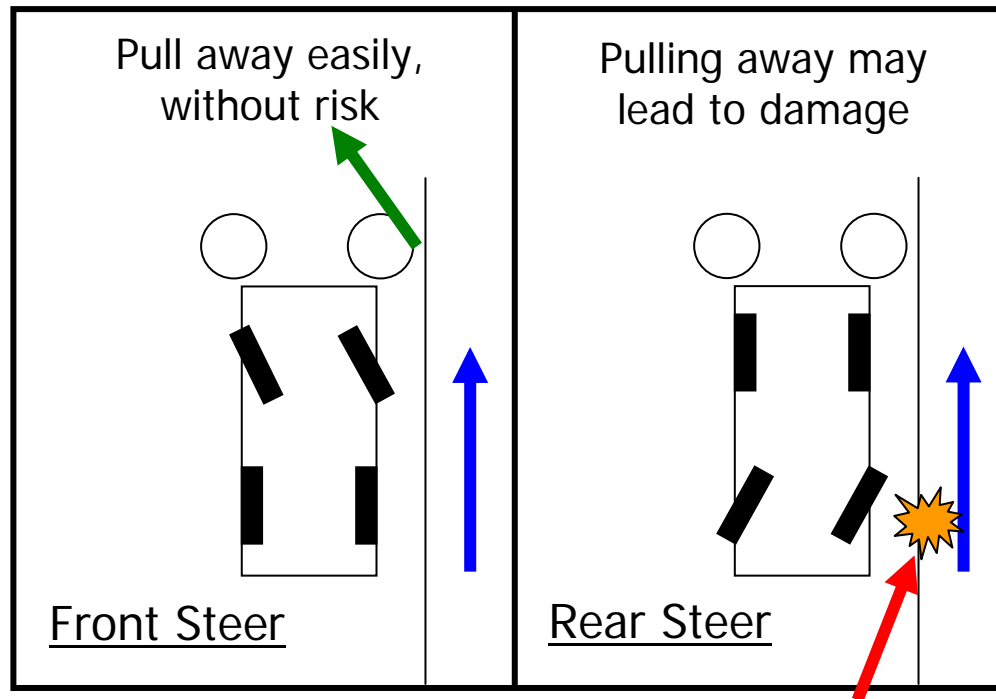


*Resulting Benefit: Operator will be more responsive to their environment since they can see it...all of it.*

# Operator Centered Design

What features support it?

Front Wheel Steering...places the operator where the steering motion takes place...Operator Confidence



*Resulting Benefit: operator confidence will translate into better performance, less equipment downtime and reduced potential for collateral damage.*

# Operator Centered Design

What features support it?

## Creature Comforts

- Center Located operator
- Heater and opt AC
- Suspension Seat
- Heated Windshield



# Operator Centered Design

What features support it?

## Creature Comforts

- Center Located operator
- Heater and opt AC
- Suspension Seat
- Heated Windshield
- AM/FM CD Player
- Reverse Camera (opt)



# Operator Centered Design

What features support it?

## Creature Comforts

- Center Located Operator
- Heater and opt AC
- Suspension Seat
- **Heated Windshield**
- AM/FM CD Player
- Reverse Camera
- Simple Controls



*Resulting Benefit: A more professional cleaning job from a more attentive, less fatigued, and more confident operator.*



# Operator Centered Design

What features support it?

## Model 400 Series

- Balanced Center Steering



# Operator Centered Design

What features support it?

Model 400 Series

- Balanced Center Steering
- Simple Ergonomic Controls



*Resulting Benefit: Better results in congested areas from a less fatigued operator.*

# Operator Centered Design

Who it Matters to...





# Superior Dust Control

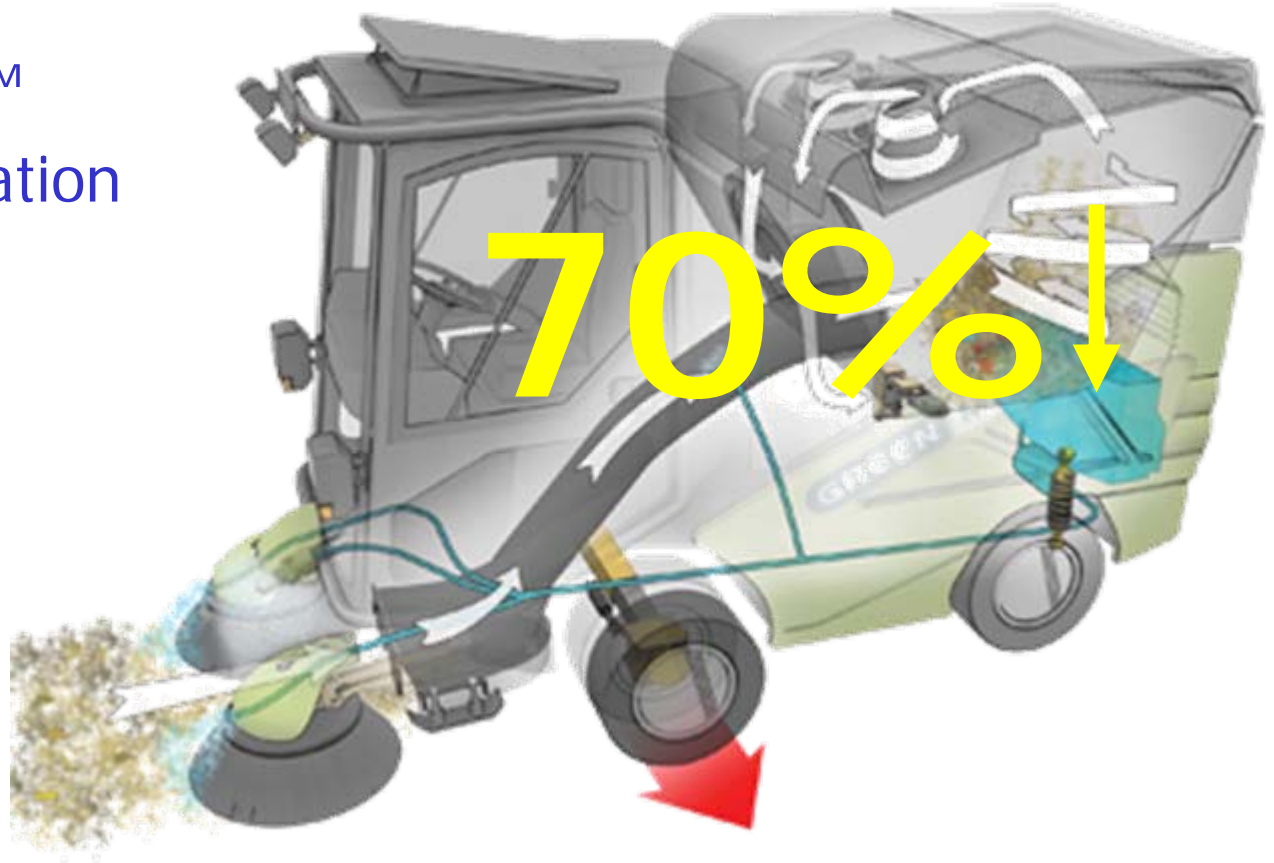
Why is it important?

- Environmental pressures are increasing
  - Air quality standards are getting tougher
  - Water quality standards are being enforced NPDES  
“Reduce runoff and keep fines out of waterways”
- Dust Containment vs. Dust Suppression
- Operating During the Day Around Adults and Children

# Superior Dust Control

What features support it?

- CloudMaker™
- 3 Stage Filtration



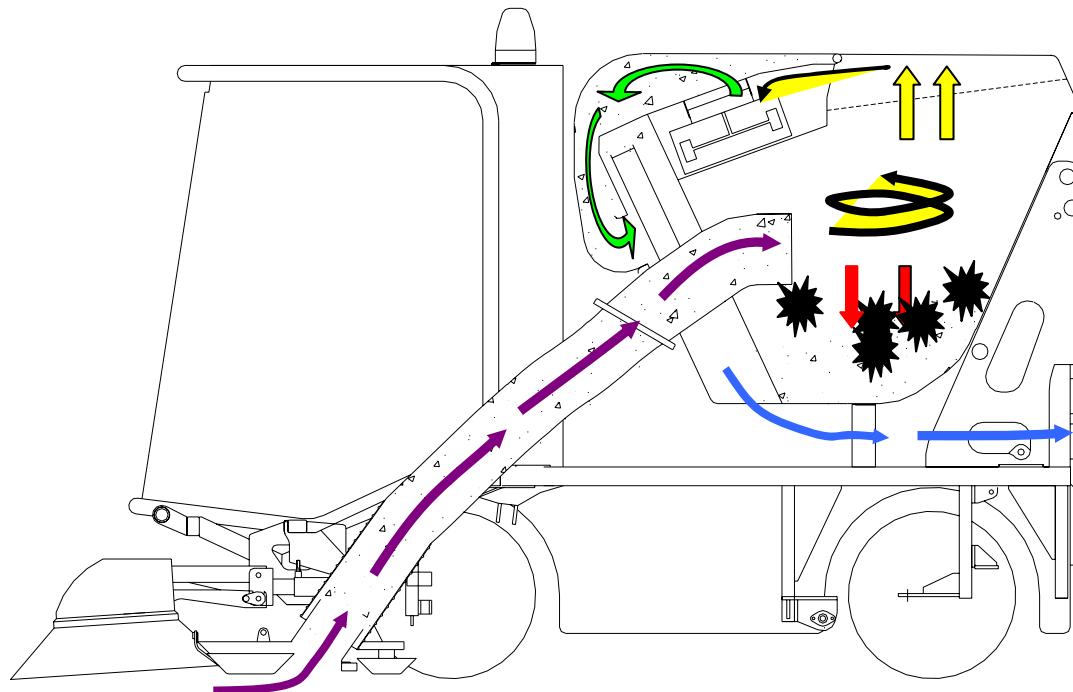
*Resulting Benefit: More pleasant operating around people because the dust is controlled at the brushes.*

# Superior Dust Control

How it works...

Final high speed Cyclonic action to drop-out fine dust prior to air entry into Suction fan

Screen-out of light material by mesh screens



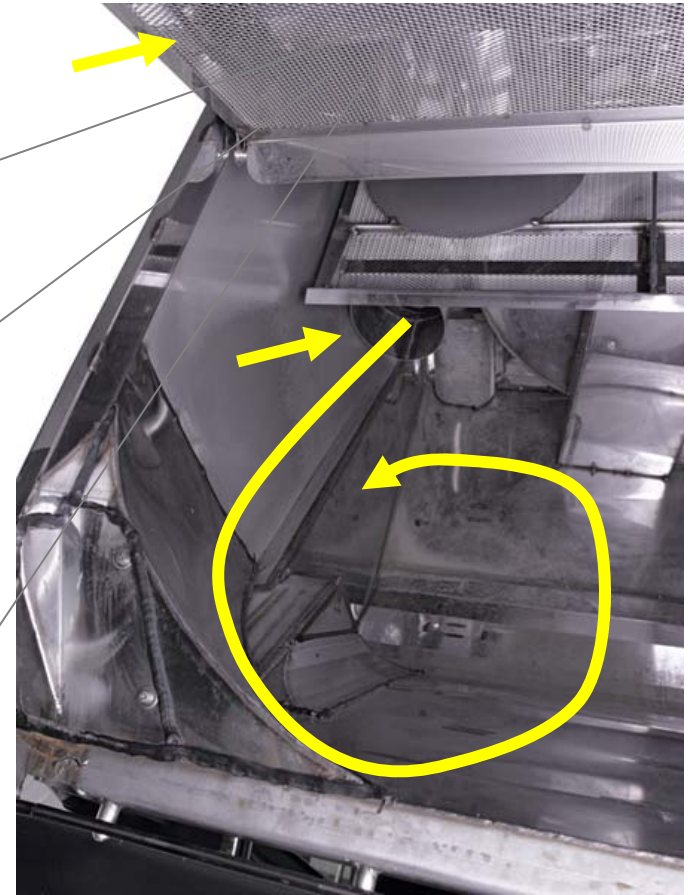
Main cyclonic action in hopper giving drop-out of heavy material

Exit of air, substantially to rear of machine

# Superior Dust Control

What features support it?

- Side Entry Suction Tube
- #1 Swirl Plates
- #2 Stainless Steel Screen
- #3 Self Cleaning Twin Cyclonic Filters



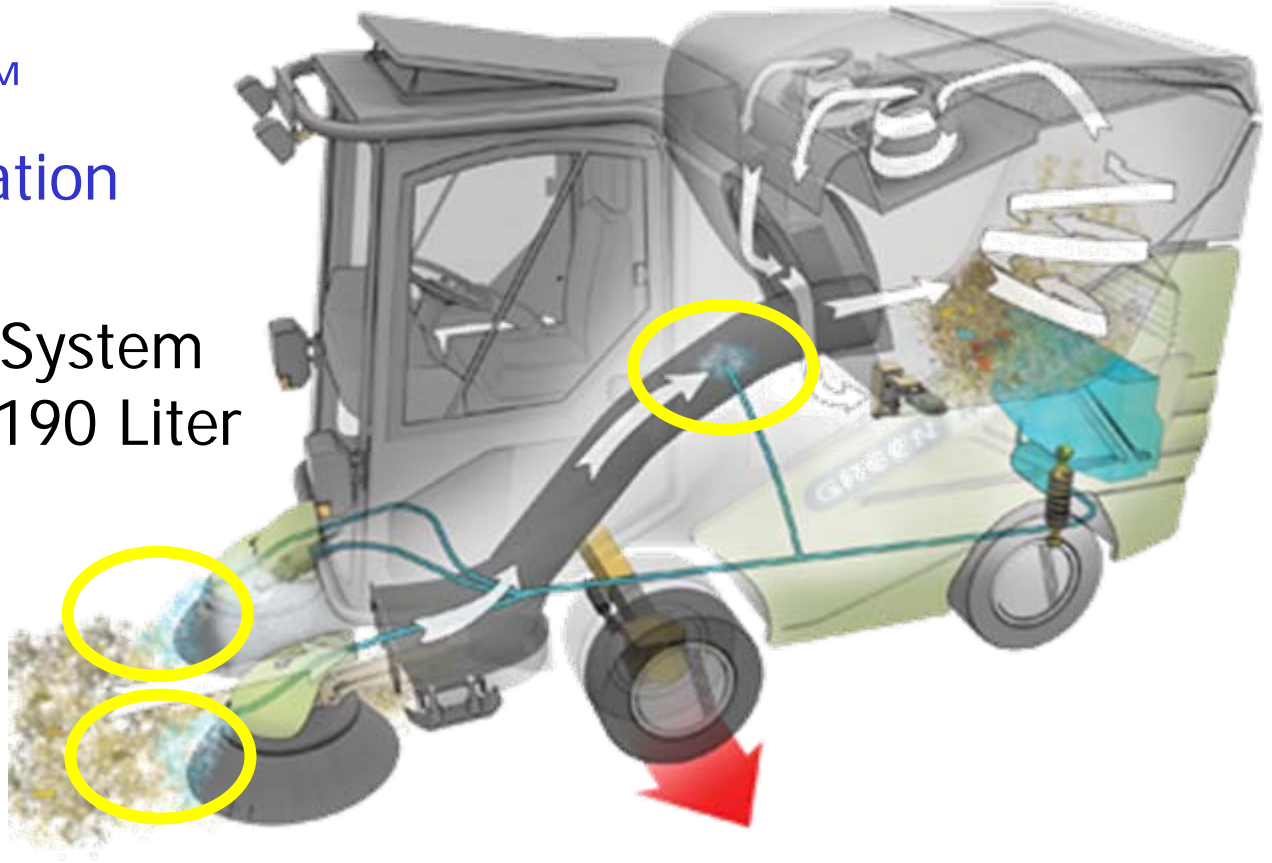
*Resulting Benefit: Long-term dust control requiring only daily wash down.*



# Superior Dust Control

What features support it?

- CloudMaker™
- 3 Stage Filtration
- Water Dust Suppression System (50 Gallon / 190 Liter Tank)



*Resulting Benefit: Ability to conserve water as necessary and achieve needed dust control as the application demands.*

# Superior Dust Control

What features support it?

Dust Suppression



**CloudMaker™**

Dust Containment

*Resulting Benefit: More pleasant operating around people because the dust is controlled at the brushes.*



# Superior Dust Control

Who it Matters to...



# 1<sup>st</sup> Class Construction

Why is it important?

- Lower Total Cost of Ownership
  - Quality Materials
  - Uptime
  - Ease of Maintenance and Service
- Improves Safety
- Versatility

# 1<sup>st</sup> Class Construction

What features support it?

- Stainless Steel
- Excellent Surface Finish
- Steel Hydraulic Tubing



*Resulting Benefit: Lower costs of operation and better looking machine result from the use of high grade stainless steel in the hopper and elsewhere on the machine.*

# 1<sup>st</sup> Class Construction

What features support it?

- Stainless Steel
- Excellent Surface Finish
- Steel Hydraulic Tubing
- Koni Suspension



*Resulting Benefit: Lower maintenance costs and better ride as a result of 4 wheel independent Koni suspension that reduces shock and vibration.*



# 1<sup>st</sup> Class Construction

What features support it?

- 4 Wheel Drive
- Curb Climbing (4 inch/100mm)
- 4 Wheel Automatic Braking w/Auto Brake Lights



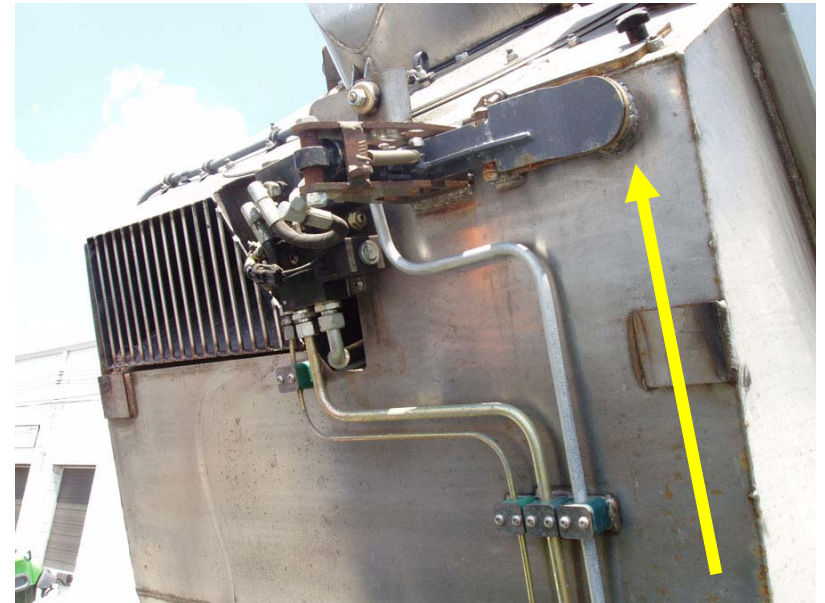
*Resulting Benefit: Safer more versatile operation.*



# 1<sup>st</sup> Class Construction

What features support it?

- Stainless Steel
- Excellent Surface Finish
- Steel Hydraulic
- Koni Suspension
- Thoughtful design
- Service Access



**Water Ejector**

**10 Year Warranty on FRAME Against Rust Through**

*Resulting Benefit: Improved safety and load management with the water ejector that drains the water in the hopper.*

# 1<sup>st</sup> Class Construction

What features support it?

- Excellent access for serviceability



# 1<sup>st</sup> Class Construction

What features support it?

- No Tool Side Panel Removal
- Hopper Safety Leg
- **Tilting Cab**
- Total Service Access
- Work Gets DONE!  
... Quickly

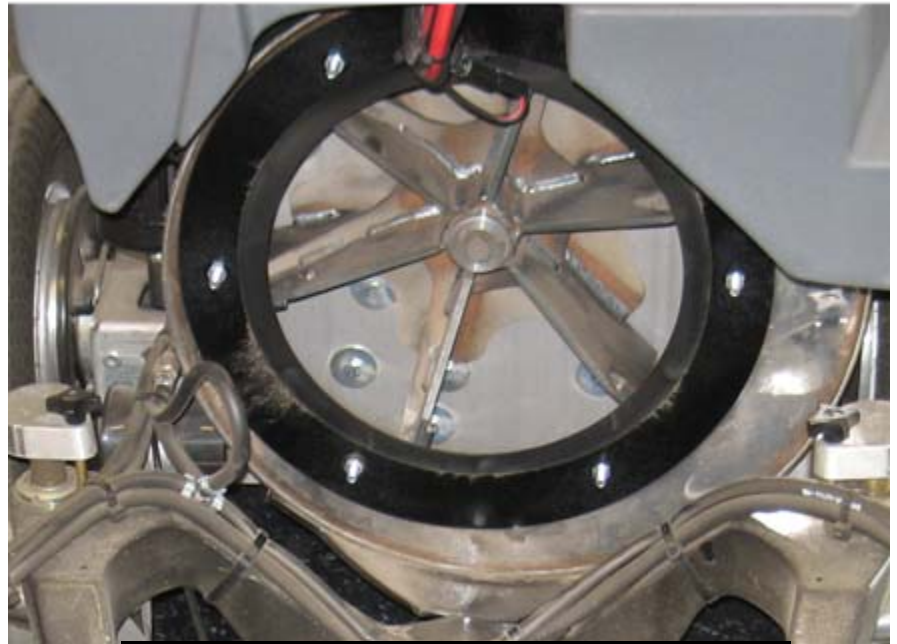


*Resulting Benefit: Lower repair and operating costs are possible because of the unsurpassed access to the vital components of the machine.*

# 1<sup>st</sup> Class Construction

What features support it?

- Over 40 yrs of Improvements
- Stainless Steel Impeller Housing
- Tungsten Carbide Hard Faced Impeller Edges
- Replaceable Wear Plates Around Housing



**400 Series Impeller**

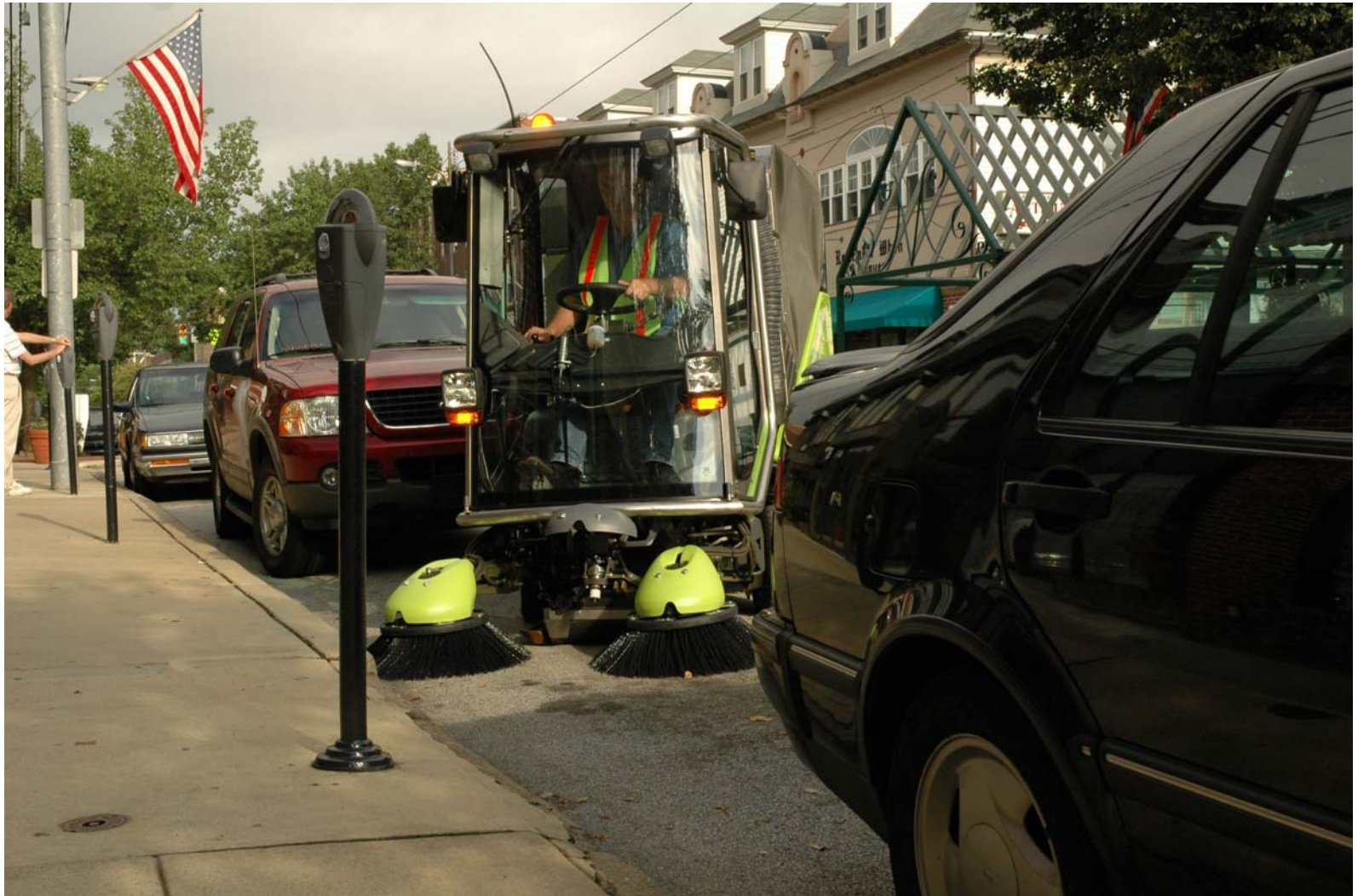
## Lifetime Warranty on IMPELLER

*Resulting Benefit: Lower operating costs and improved safety are delivered by the Model 400's high performance compacting fan that reduces debris (as high as 3:1 compaction) and is protected from premature wear.*



# 1<sup>st</sup> Class Construction

Who it Matters to...



# Break



# Industry Leading Productivity

Why is it important?

- Why is it important?
  - Reduce the Cost of Cleaning
  - More Time Spent Cleaning
  - Larger Area Covered
  - Potential to Reduce Cleaning Fleet and Staff
  - Easier Storage
    - Drive to Site vs Trailer
    - No Specialized Local Storage



# Industry Leading Productivity

What features support it?

## What Features Support It?

- Transport Mode
  - 20 mph / 32 km/h



*Resulting Benefit: Time spent doing what the machine was designed to do...clean*

# Industry Leading Productivity

What features support it?

What Features Support It?

- Transport Mode
- Vari-track™



*Resulting Benefit: Safely transport due to wider track providing more stability*

# Industry Leading Productivity

What features support it?

What Features Support It?

- Transport Mode
- Vari-track™
- Whoosh Wander Hose
- Suction Nozzle Flap



*Resulting Benefit: Cleaner path from fewer passes from higher performance from pulsing air to raise hard to lift items.*

# Industry Leading Productivity

What features support it?

What Features Support It?

- Transport Mode
- Vari-track™
- Whoosh Wander Hose
- Suction Nozzle Flap
- Pressure Washer (opt)



*Resulting Benefit: Water when you need it, where you need it.*



# Industry Leading Productivity

Who it Matters to...



# People Friendly

Why is it important?

- Why is it important?
  - Allows for Cleaning During the Day  
...be seen cleaning
  - Won't Disrupt Employees, Students, Visitors, Residents or Customers
  - Progressive Impression

# People Friendly

What features support it?

What Features Support It?

- Styling



*Resulting Benefit: Able to clean when people are around.*



# People Friendly

What features support it?

What Features Support It?

- Styling
- Full View of Operator



*Resulting Benefit: Bystanders feel less threatened*

# People Friendly

What features support it?

## What Features Support It?

- Styling
- Full View of Operator
- Quiet Operation



# People Friendly

What features support it?

## What Features Support It?

- Styling
- Full View of Operator
- Quiet Operation
- All Exhaust Air Out Rearward



# People Friendly

What features support it?

What Features Support It?

- Styling
- Full View of Operator
- Quiet Operation
- All Exhaust Air Out Back
- It works...



*Resulting Benefit: Clean when the people are around. Recognition that the job is getting done*



# People Friendly

Who it Matters to...





# What's Green About Green Machines?

- Why its Important:

"Green" is not only about reducing the carbon footprint of a given product, but it also involves how a given product impacts the environment in which it operates.
- What Features Support It:
  - Reduce engine emissions with a **EPA Tier 3 engine**
  - Reduce engine emissions further through the use of **B5 Bio-Diesel**
  - Reduce run-off through **dust containment** rather than dust suppression using the CloudMaker™ which traps dust in the hopper vs. spraying it down on the surface
  - Reduce water usage **70%** compared to traditional air sweepers by using the CloudMaker™
  - Reduce landfill waste with the **3 stage filtration system** that does not utilize disposable media filters, simply rinse out system and it's ready to go another day
  - Maintain consistent **high performance cleaning ALL DAY LONG**, because there are no filters to plug (which would reduce suction performance)
  - Increase utilization and therefore cleaning activity because of the overall **operator comfort and ease of use** means the unit will be out working
  - Increase notice of the cleaning program with its **crisp lines & unique green color**.

# Competition

## Madvac CN100



### CUSTOMER RESULT



Engine

Kubota 3-cyl Turbo 31hp

Engine performance

35%

Kubota 4-cyl Turbo 42hp

Suction

2,680 c.f.m. at 3100 r.p.m.

Superior vacuum

37%

4,236 c.f.m. at 2700 r.p.m.

Suspension

Leaf springs w/stabilizer bars

Operator comfort

Koni Coil springs w/shock

Payload

1,276 lbs.

Heavier debris loads

38%

1,760 lbs.

Braking

Front wheel hydrostatic plus  
foot operated **rear discs**

Public safety

4 wheel hydrostatic plus foot  
operated front & rear drums

Advance RS850



**CUSTOMER  
RESULT**



Transport

15 m.p.h.

More time sweeping

33%

20 m.p.h

Height

90"

Low clearance

15%

78"

Sweep Width

63"  
Fixed

Flexible sweeping path

28%

47" to 80.7"  
Joystick controlled

Suction

3,212 c.f.m.

Enhanced lift

31%

4,236 c.f.m.

Steering

Rear wheel

Less damage and danger

Front wheel

## Madvac PS300



### CUSTOMER RESULT



#### Capacity

40 gallons  
No compaction

Fewer dumps

225 gallons  
Shredding impeller  
ratio of 3:1

#### Suction

1343 c.f.m. at 3100 r.p.m.

One pass productivity

52%

2050 c.f.m. at 2800 r.p.m.

#### Collection Bag

Estimated 4 year cost \$6,000  
Uses special porous bags

Lower cost of ownership

Estimated 4 year cost - \$900  
Uses regular standard bag  
available anywhere.

#### Safety

Debris retains it's original shape  
including jagged edges and  
sharp objects

Less risk of injury

Fan safely pulverizes objects  
and glass into small pieces with  
no sharp edges

#### Stopping

Continues downhill when drive  
lever is released on a grade

Potential for damage

Comes to a complete stop  
immediately when drive lever is  
released



# "The Business"



# Special Colors

- Only green changes color
- Brush Covers to Gray
- Green Side Panels to Customer Color



# Product Line Changes

Some Product Rationalization & Changes Underway

East	Current Line	New Line
Model 400 Series	414 2DS 414 RS 414 RSD 424 TR 424 HS	414 w/optional "RS" seat 424 (high speed only)  (January 1 <sup>st</sup> , 2009)
Model 636	636 Scotland	636 Minneapolis (Q1 '09) Full Gray Cab
Model 525	525	Discontinued (Sept '08)

# Sales Materials and Timing

Sales Tools	636HS	400 Series
Literature	Now e/f	Existing-Nov e/f
Sales Video	Existing	Existing
Flip Chart Presenter	Now	NA
Product Tutorial	Now	
Product Solutions & Application Guide	Now	Now
Tradeshow Booth (10 x 20)	Now	Now
Bid Specifications	Now	Existing
Competitive Comparisons	Existing	Existing
On-Line Photo Gallery	Now	Now
CD Presenter	Q1 '09	Q1 '09
On-Line Demonstration	Q1 '09	Q1 '09
Full Demo Fleet – 1 per Region	Q1 '09	Q1 '09



# Thank You

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- Any Questions?