



- PAPA 2024



**PAPA 2024**

**Whats New Bearcat/Etnyre**

**Longitudinal Joint Sealant**

**“VRAM/JBAND”**

**Tack**

**Nozzle Size**

**Calibration**



E. D. Etnyre & Co.







**WARNING**

1. If moisture is present in tank, or when changing asphalt grades, read and follow instructions in the operators manual.
2. Keep area clear of open flames, sparks, or sources of combustion.
3. All pipes and hose connections must be secure before operating.
4. Use protective gear as recommended in operators

**WARNING**

1. Make certain everyone is clear of machine before starting engine or operation.
2. Always have shields in place when operating.

**WARNING**

Do not attempt any operation which is not described in the manuals. Other operations could cause serious injury or death.

Read, understand and follow the manuals when operating or performing

**WARNING**

6" min.  
150 mm. min.

Do not light burners unless flues are covered. Explosion can occur causing death or serious injury.

Do not light burners with less than:

Lower Burner  
Lit.  Gal.

Upper Burner  
Lit.  Gal.





JBAND/VRAM





E. D. Etnyre & Co.

SPRAYBAR







Let's look at  
the products  
use for tack

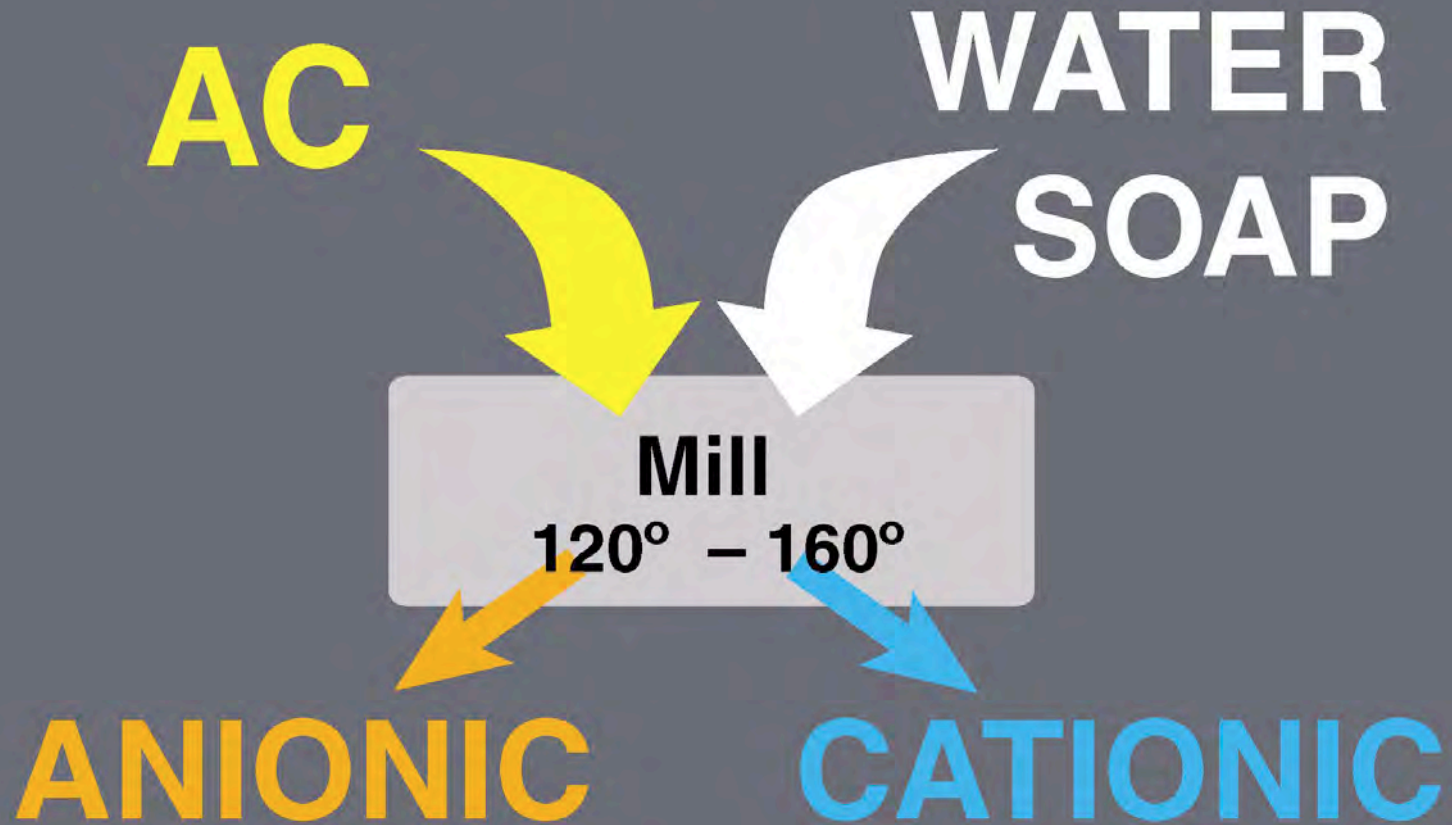


1. Emulsion
2. non-tracking
3. Hot applied



So what are  
emulsions?

# EMULSIONS



# EMULSIONS

CRS-1

SS-1

CRS-2

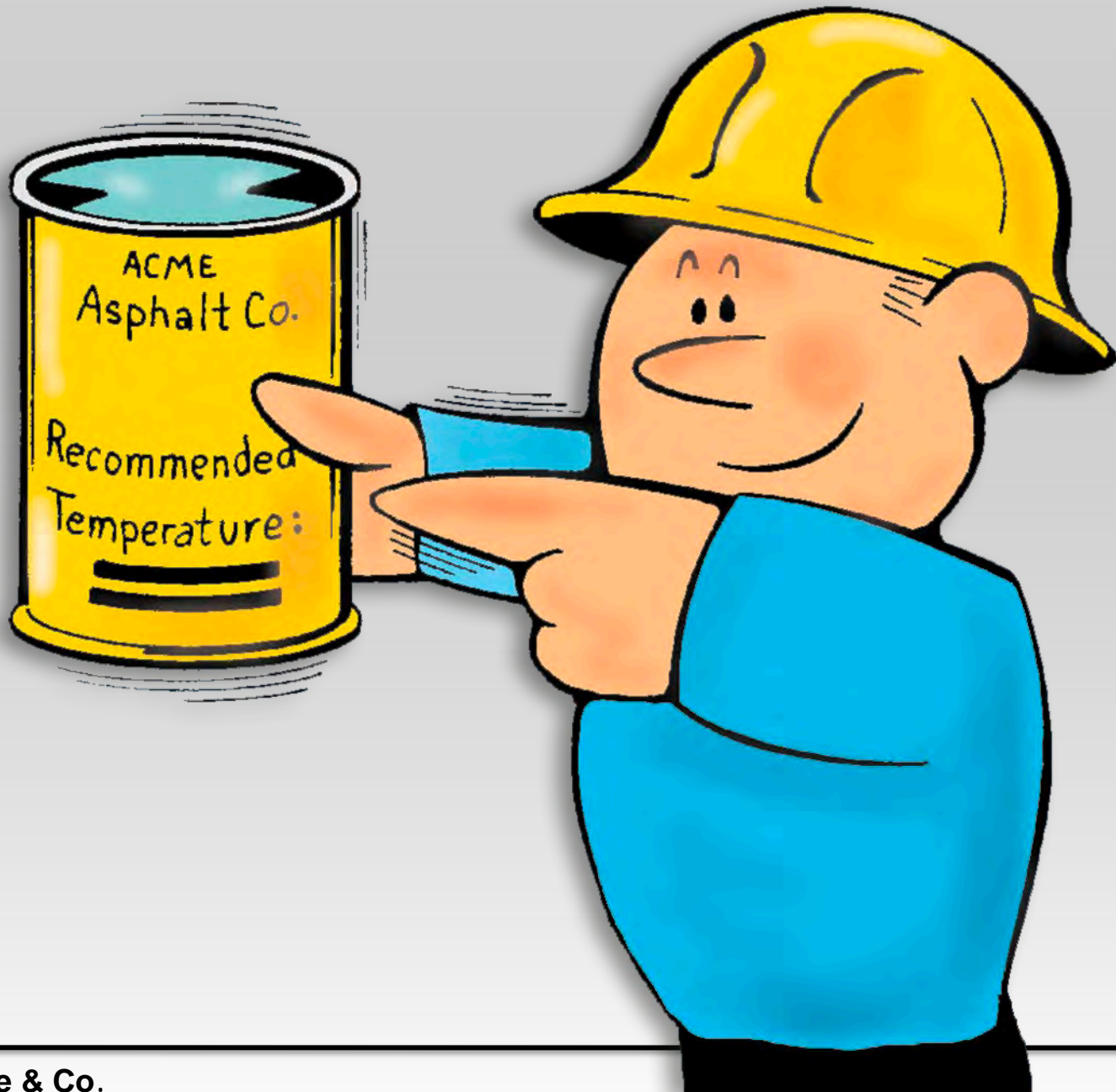
SS-1h

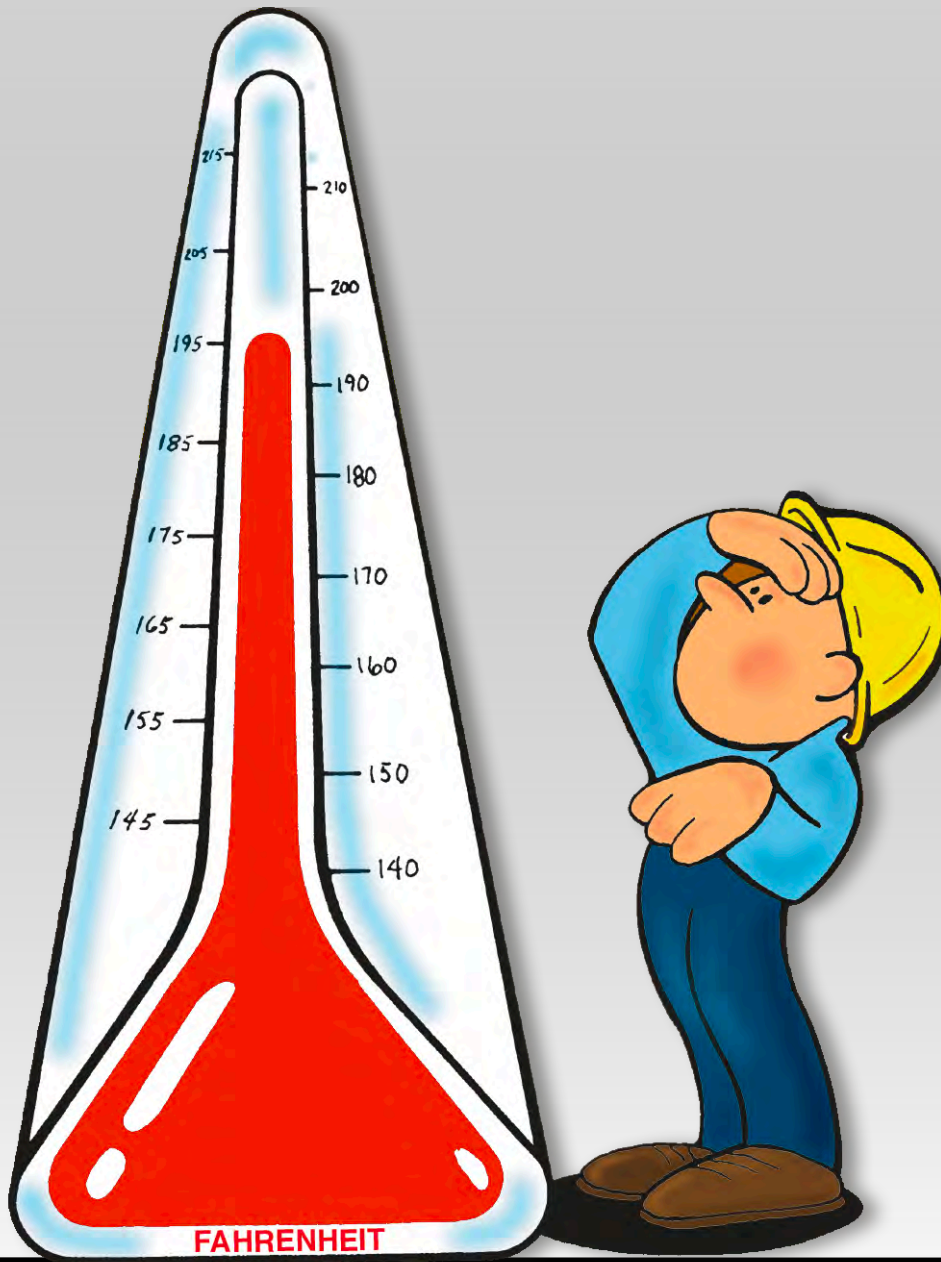
CRS-1h

SS1hp

CSS-1h

CMS-2







# *Example of Emulsion Break*

Unbroken Emulsion



After Breaking



# NON-TRACKING TACK

- VERY SIMILAR TO THE EMULSIONS WE JUST TALKED ABOUT, BUT NEED SOME SPECIAL CARE AND HANDLING.
- KEEP CIRCULATED
- KEEP HOT
- SHORT SHELF LIFE
- LARGER STRAINER
- DO NOT DILUTE

# DO

**Store the product in a tank that can be circulated or gently agitated least once per week**

**Store the product at the recommended temperature of 50°F to 110°F**

**Clear paving surfaces of dust and dirt immediately before application**

**Ensure the product application temperature is 160°F to 180°F**

**Apply product to D.O.T. specifications, within a range of 0.06 to 0.10 gal. /sq. yd., while ensuring FULL coverage**

**Allow the product to BREAK, DRY and SET prior to permitting any vehicles on the surface (typically 15 to 30 min. under normal paving conditions)**

**Follow safety procedures and wear personal protective equipment (PPE).**

# **DON'T**

- Contaminate the product with diesel fuel or other solvents**
- Contaminate the product with ionic products of opposite charge**
- Dilute the product for tack coat applications**
- Allow the product to freeze, or drop below a temperature of 45°F**
- Allow the product to boil, or rise to a temperature above 180°F**
- Heat the product without gentle agitation or circulation**
- Store the product for more than 1 week without agitation**
- Use the product after 4 weeks of storage**
- Apply product when raining, or to a wet surface**
- Apply product to dusty or dirty surfaces**
- Apply the product to surfaces that are extremely hot (over 150°F)**
- Apply the product at a rate exceeding 0.10 gal. /sq. yd.**

# THINGS TO KEEP IN MIND

1. KEEP AT A CONSISTENT TEMP
2. DO NOT OVER CIRCULATE
3. USE TACK AND GET FRESH AS OFTEN AS POSSIBLE
4. SUCK BACK SPRAY SYSTEM
5. MINIMIZE DIESEL USEAGE WHEN FLUSHING

# HOT APPLIED TACK

- VARIOUS TYPES
- 265 DEGREES TO 400 DEGREES F
- USE CAUTION WHEN HANDLING DO TO TEMPERATURE
- USE CAUTION WHEN SWITCHING PRODUCTS IN TANK

What about  
application?



# ***Successful Tack Coat***

The Ultimate Goal:

Uniform, complete, and adequate coverage





# ***Construction Issues***

Uniformity of the Tack Coat Application

Non-uniform Application    Proper Application



# ***Construction Issues***

Uniformity of the Tack Coat Application

Tack application with blocked nozzles AND no overlap of nozzle spray fan

Nozzles may be too large





OLD RIDGE RD

LEFT TURN SIGNAL

LEFT TURN SIGNAL

H

AMERIPURST

Prostate Medication  
Prescription



E. D. Etnyre & Co.





2012/08/28 05:24







Let's talk  
about the  
equipment













# Basic Functions

1. Fill the tank
2. Heat material in tank
3. Circulate material in tank
4. Circulate material in spray bar
5. Spray metered amount of material
6. Handspray
7. Suck-back/clean out
8. Unload/transfer
9. Flush

# Metering System

Four important features to keep in mind

1. Desired application rate – gallon /yard<sup>2</sup>
2. Forward ground speed – feet per minute
3. Width of spray bar – feet
4. Asphalt pump output – gallons/minute







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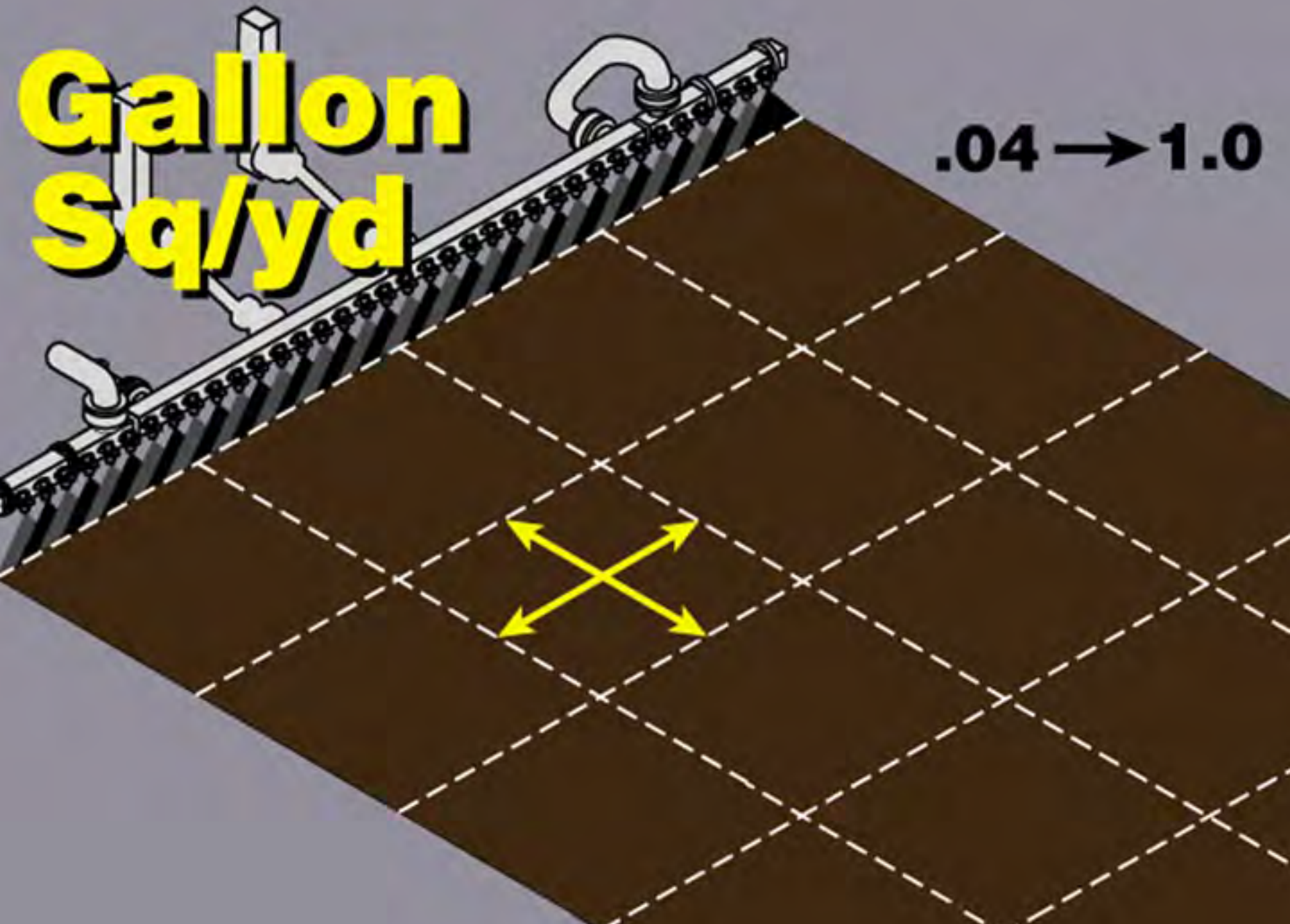
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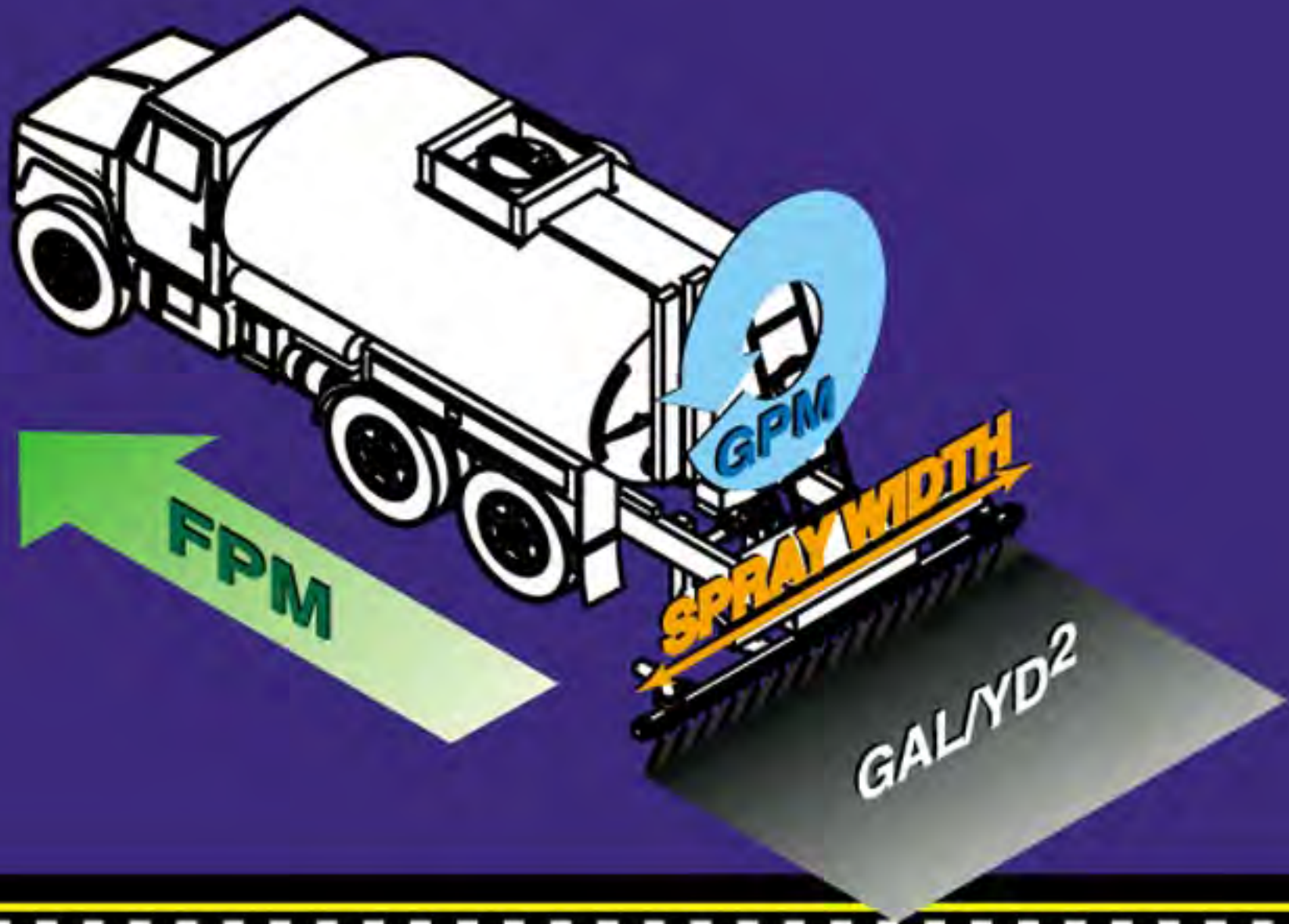




**Gallon  
Sq/yd**

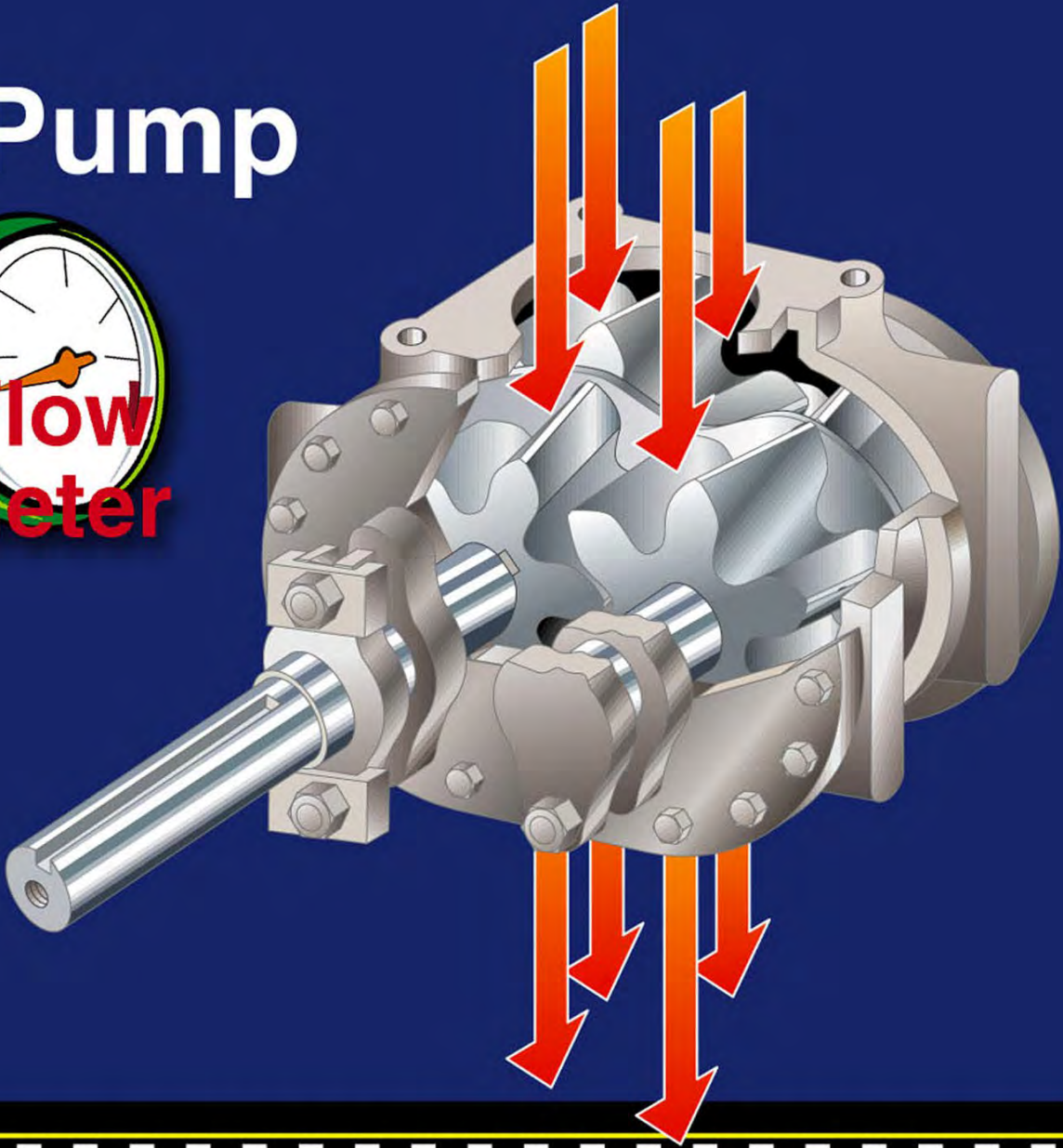
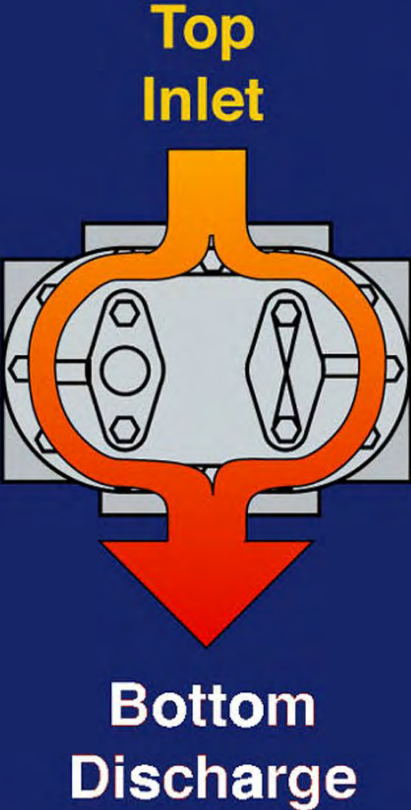
**.04 → 1.0**







# Asphalt Pump





**FPM**

**GPM**







SPRAYBAR  
ON  
OFF

POWER  
ON  
OFF

.300 GAL/YD2  
300 FPM      120 GPM

CIRCULATION  
RATE

CHANGE  
DISPLAY

MEMORY

1 2 3 4 5

RESET  
FEET  
METRES

RESET  
GALLONS  
LITRES

APPLICATION  
RATE

HYD OIL  
BAR

MAIN BAR

4 3 2 1 1 2 3 4

TEMP CENTERED

PTO  
LOW  
TANK LEVEL

LEFT WING

RIGHT WING

MARKER 12 11 10 9 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 9 10 11 12 MARKER

WING FOLD

WING FOLD controls

FRONT  
REAR  
SUCTION

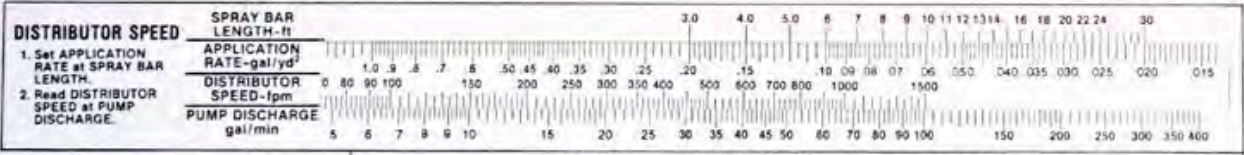
ERROR  
OFF  
BAR LATCH

LOAD  
SUCK BACK

SUCKBACK  
HYD MOTOR

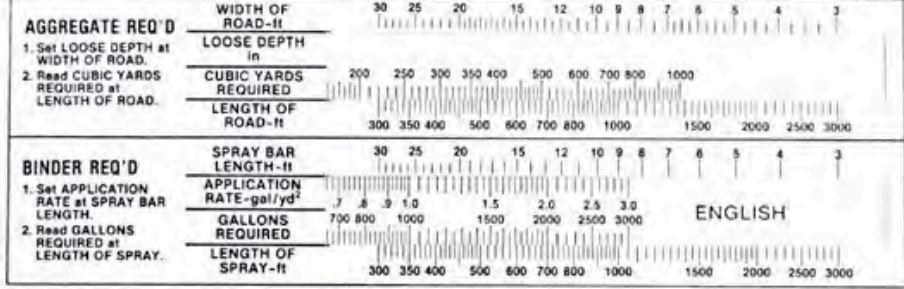






**"Black-Topper"  
Computator**  
English

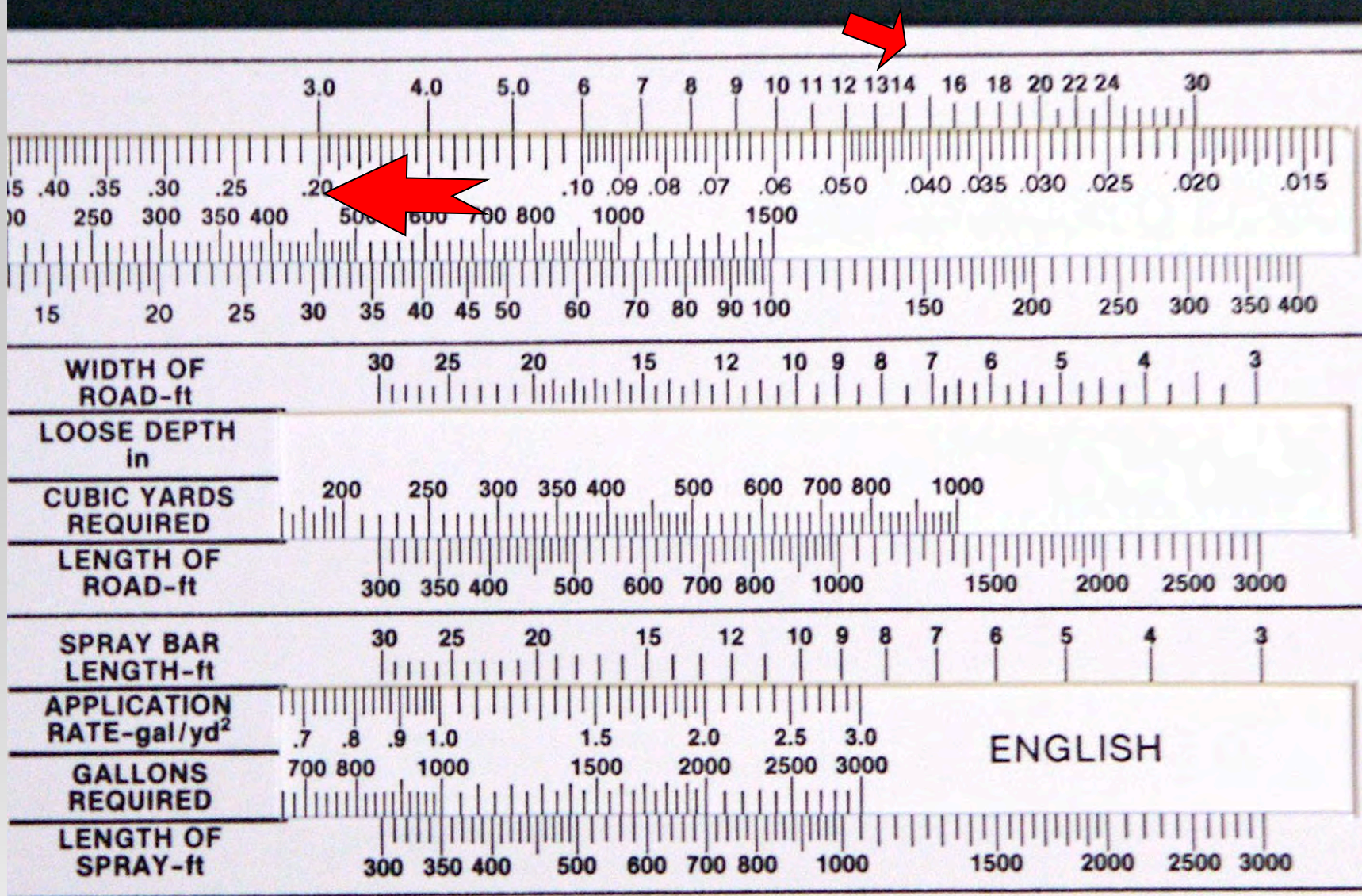
E. D. ETNYRE & CO.  
Oregon Illinois 61061-9778  
Phone: 800-995-2116 or 815-732-2116



3390408

A-113-94





*Available Now!*



Introducing the new  
*Etnyre Asphalt Computator App*

Get it at the App Store or wherever  
*Free* Apps are available.



# Pump Rate

Spray Bar Length  (ft)

Application Rate  ✓ (gal/sq yd)

Distributor Speed  ✓ (FPM)

FPM     MPH

Calculate

Pump Rate  (GPM)

Nozzle (optional)

Configuration

Recommended Speed ( 450 - 844 FPM )

English     Metric

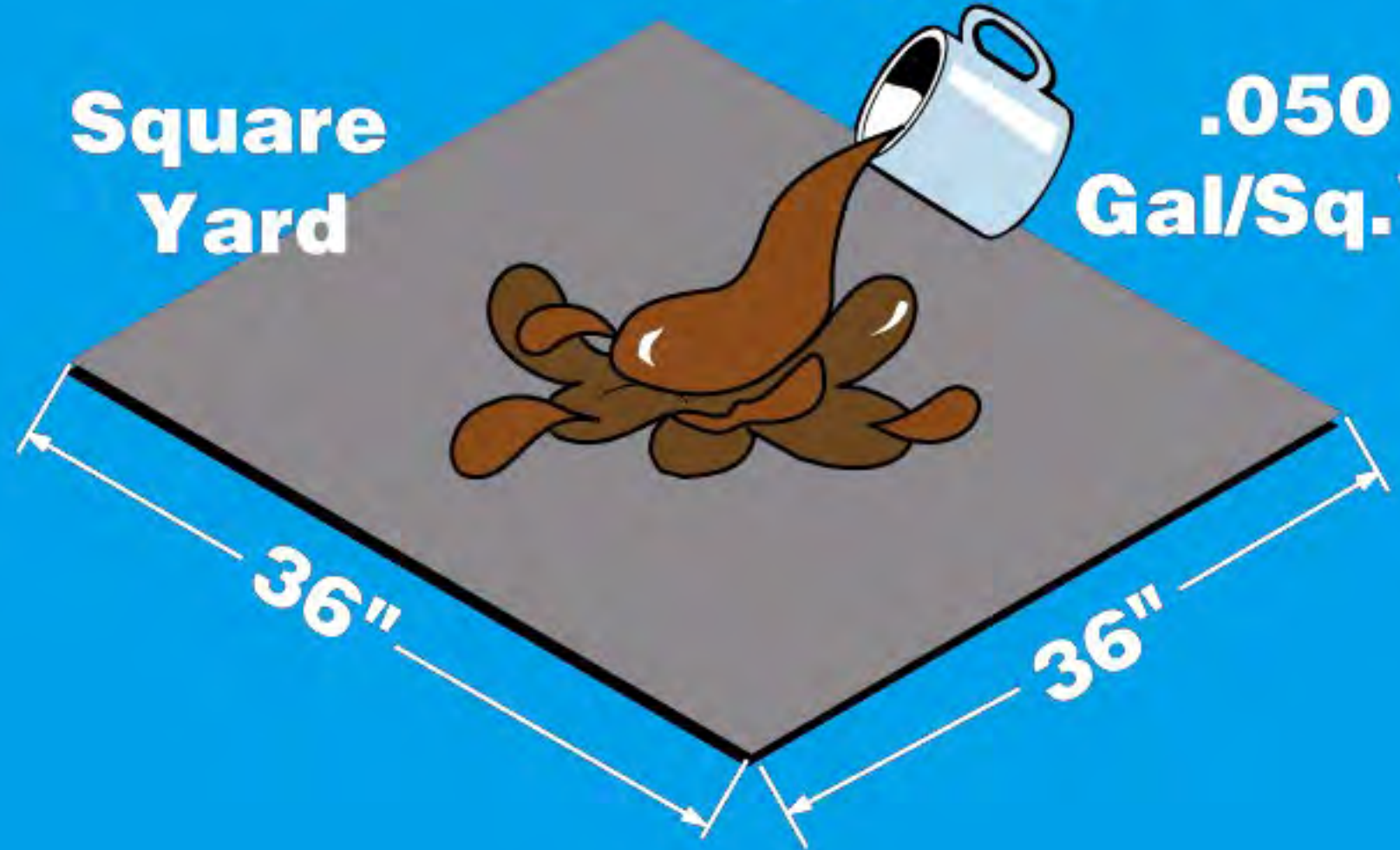
Clear    Aggregate Calc    Binder Calc



**6.4  
Ounces**

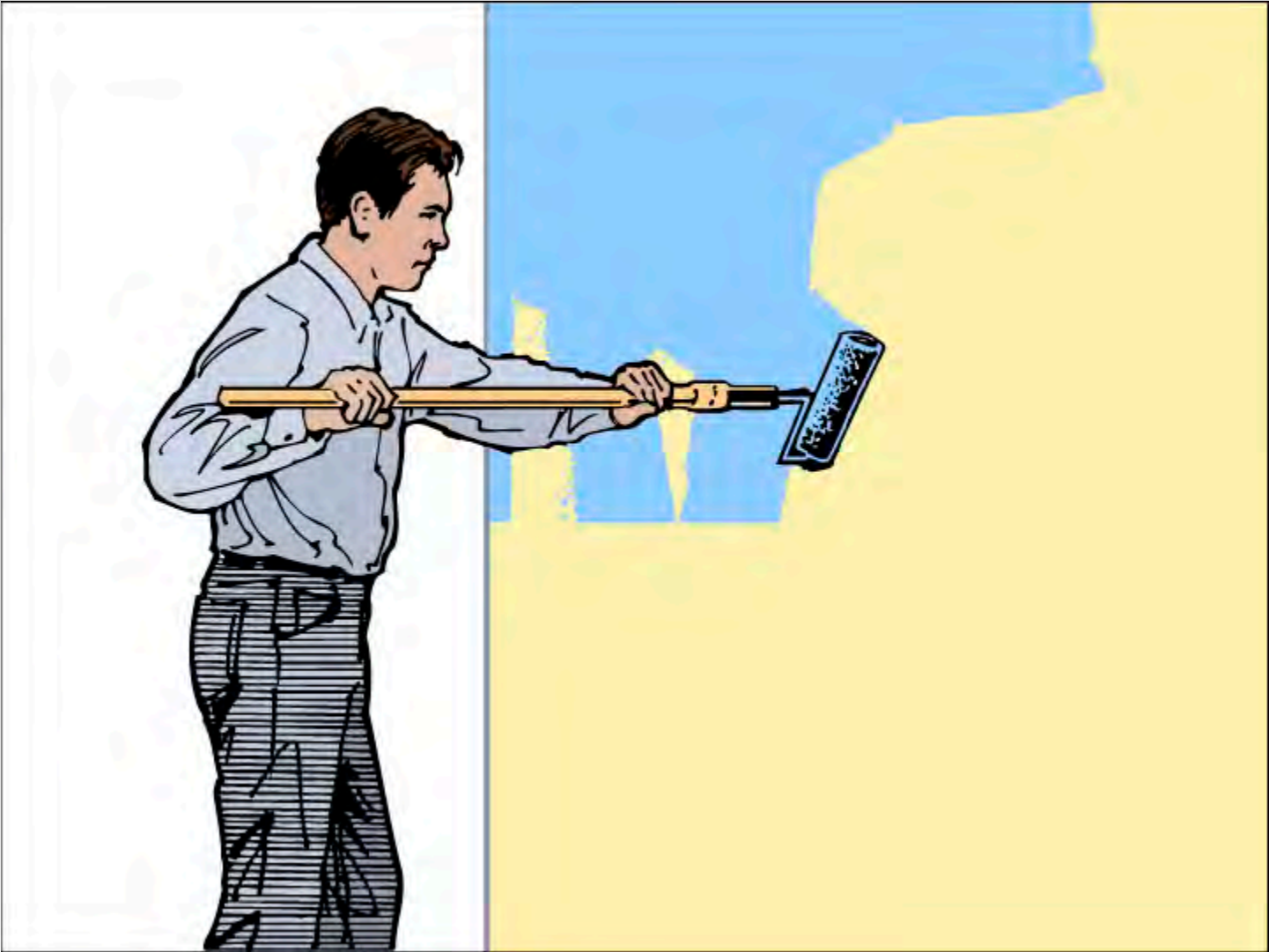
**Square  
Yard**

**.050  
Gal/Sq.Yd.**



**36"**

**36"**

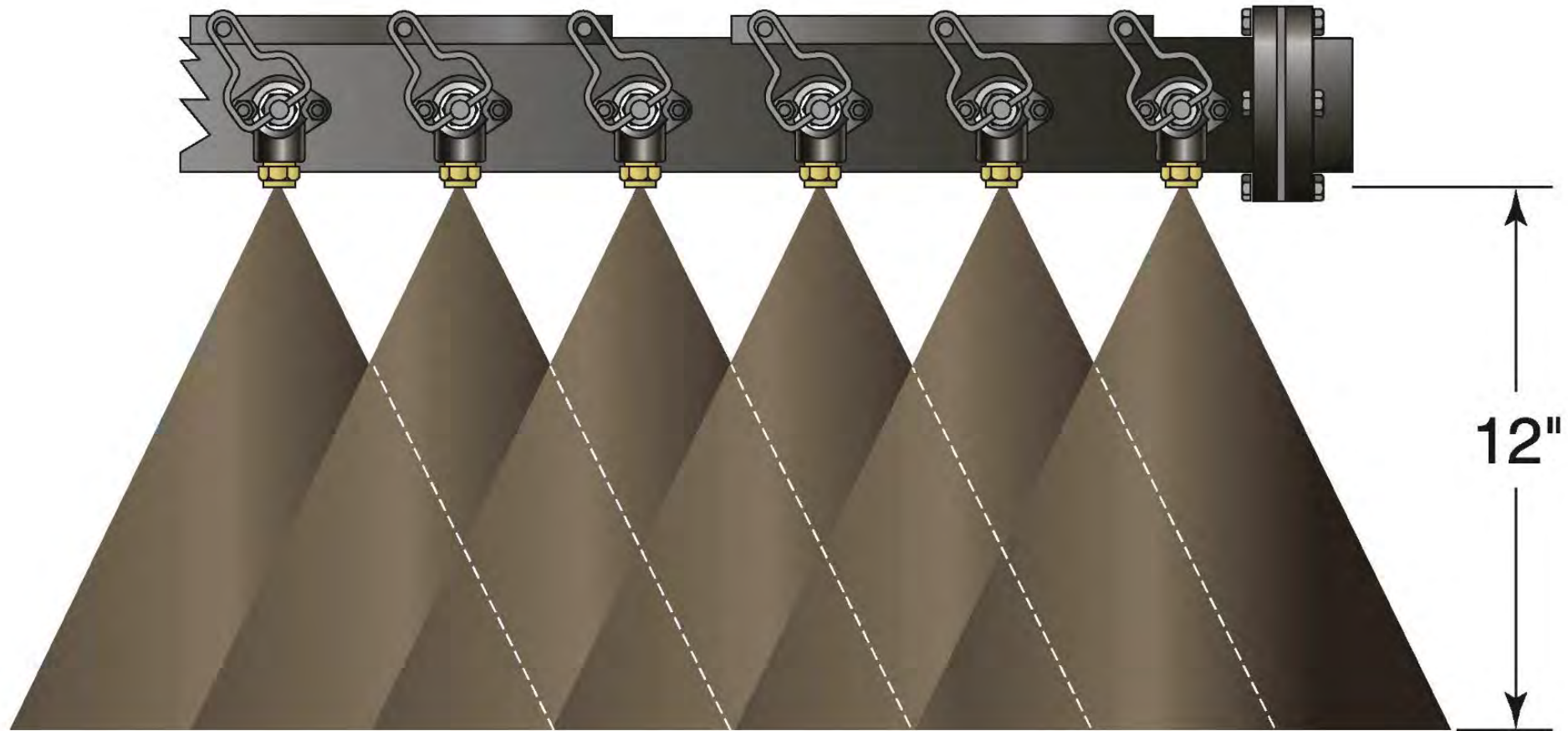




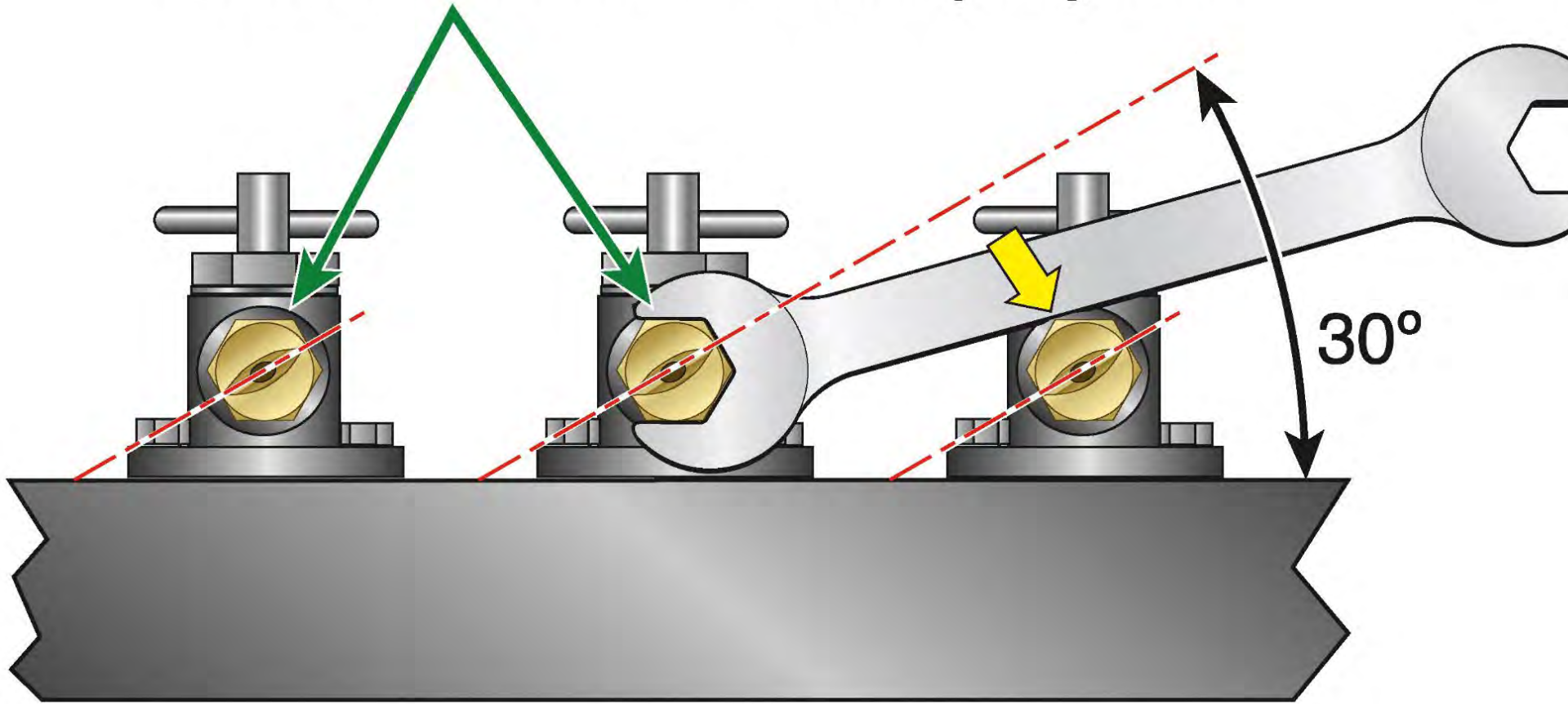
# SPRAY BAR



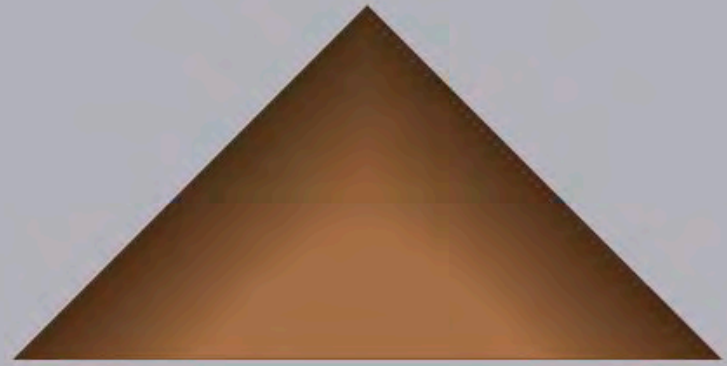
# Triple Overlap



# Nozzle Slot 30° from Spray Bar



Spray Bar (viewed from bottom of bar)





Ref.	Part No.	Description	Application Gallons Per Square Yard	Application (Metric) Liters Per Square Meter	US Flow Gallons Per Minute Per Foot
1	3353788	V Slot Tack Nozzle 1/8" Rifle Bored	.05 - .20	.23 - 0.91	3.0 - 4.5
	3351013*	V Slot Tack Nozzle 1/16" Coin Slot	.05 - .20	.23 - 0.91	3.0 - 4.5
	3354904	V Slot Tack Nozzle 1/8" Counterbored	.05 - .20	.23 - 0.91	3.0 - 4.5
2	3351008	S36-4 V Slot	.10 - .35	.45 - 1.58	4.0 to 7.5
3	3351009	S36-5 V Slot	.18 - .45	.81 - 2.04	7.0 to 10.0
4	3352368	Multi-Material V Slot	.15 - .40	.68 - 1.81	6.0 to 9.0
5	3351015	3/32" Coin Slot	.15 - .40	.68 - 1.81	6.0 to 9.0
6	3352204	Multi-Material V Slot	.35 - .95	1.58 - 4.30	12.0 to 21.0
7	3355154	End Nozzle (use with 3352204 nozzle)	.35 - .95	1.58 - 4.30	12.0 to 21.0
8	3352205	Multi-Material V Slot	.20 - .55	.91 - 2.49	7.5 to 12.0
9	3352210	End Nozzle (use with 3352205 nozzle)	.20 - .55	.91 - 2.49	7.5 to 12.0
10	3351014	3/16" Coin Slot	.35 - .95	1.58 - 4.30	12.0 to 21.0
11	3351010	1/4" Coin Slot	.40 - 1.10	1.81 - 4.98	15.0 to 24.0

\* Special Order




# Nozzle Range GPM

Min X Ft. Bar = Minimum GPM

Max X Ft Bar = Maximum GPM

**Nozzle Application Charts**



Ref.	Part No.	Description	Application Gallons Per Square Yard	Application (Metric) Liters Per Square Meter	US Flow Gallons Per Minute Per Foot
1	3353788	V Slot Tack Nozzle	.05 - .20	.23 - .91	3.0 to 4.5
2	3351008	S36-4 V Slot	.10 - .35	.45 - 1.58	4.0 to 7.5
3	3351009	S36-5 V Slot	.18 - .45	.81 - 2.04	7.0 to 10.0
4	3352368	Multi-Material V Slot	.15 - .40	.68 - 1.81	6.0 to 9.0
5	3351015	3/32" Coin Slot	.15 - .40	.68 - 1.81	6.0 to 9.0
6	3352204	Multi-Material V Slot	.35 - .95	1.58 - 4.30	12.0 to 21.0
7	3352205	Multi-Material V Slot	.20 - .55	.91 - 2.49	7.5 to 12.0
8	3352210	End Nozzle (3352205)	.20 - .55	.91 - 2.49	7.5 to 12.0
9	3351014	3/16" Coin Slot	.35 - .95	1.58 - 4.30	12.0 to 21.0
10	3351010	1/4" Coin Slot	.40 - 1.10	1.81 - 4.98	15.0 to 24.0

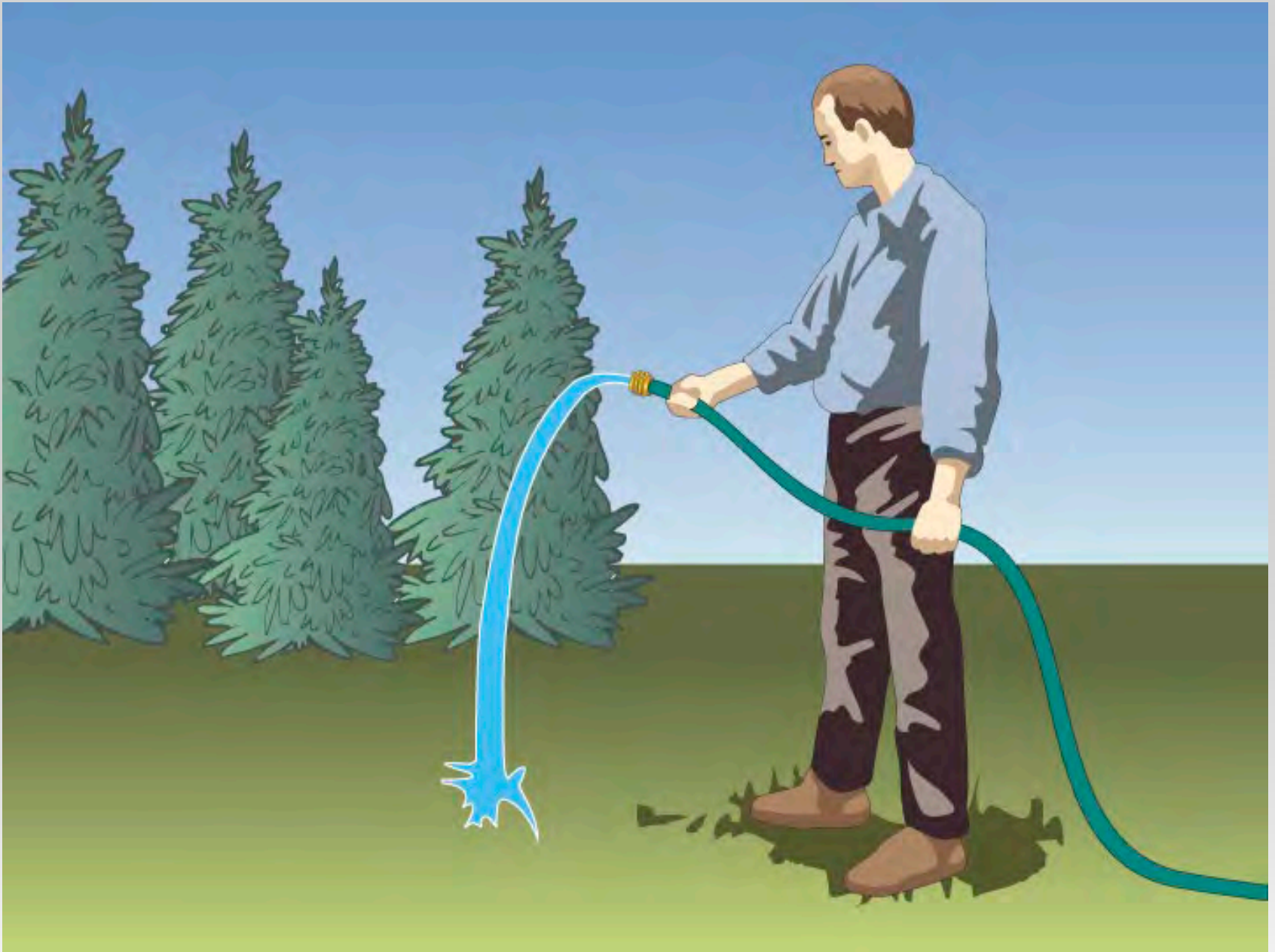
**E. D. ETNYRE & CO.** Oregon, Illinois 61061 Phone: 815/732-2116 [www.etsyre.com](http://www.etsyre.com) A-149-10

# 3353788 Etnyre V Slot Tack Nozzle

App Rate .05 - .20

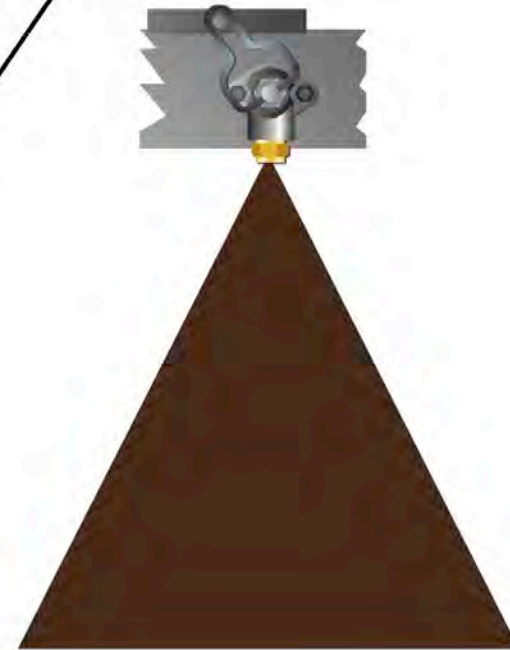
Drive Distributor to achieve GPM between Min and Max for Application accuracy

# of Feet	Min GPM	Max GPM	# of Feet	Min GPM	Max GPM
1	3	4.5	13	39	58
2	6	9	14	42	63
3	9	13	15	45	67
4	12	18	16	48	72
5	15	22	17	51	76
6	18	27	18	54	81
7	21	31	19	57	85
8	24	36	20	60	90
9	27	40	21	63	94
10	30	45	22	66	99
11	33	49	23	69	103
12	36	54	24	72	108



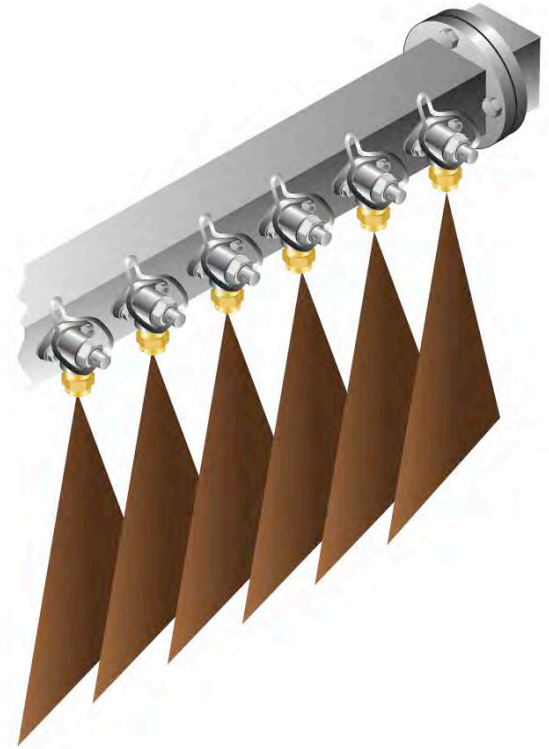
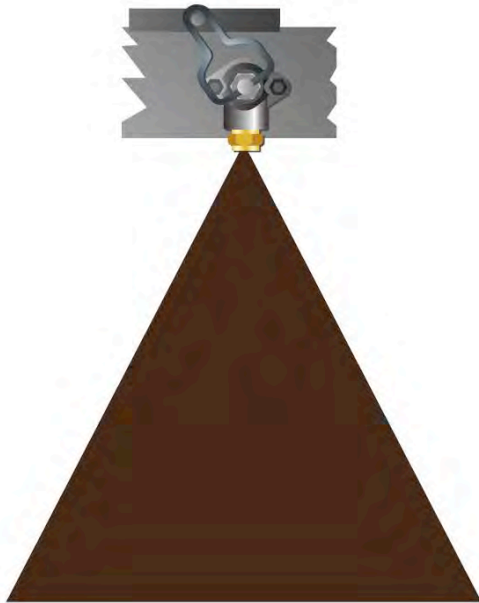


# Pump Meter – Volume



# Spray – Pressure

# Flat Fan

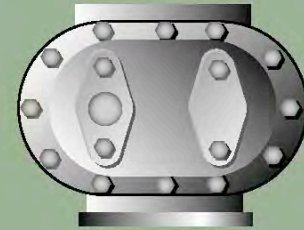
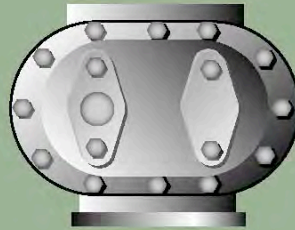
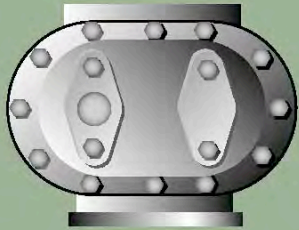


**50 GPM**

**50 GPM**

**50 GPM**

Asphalt  
Pump



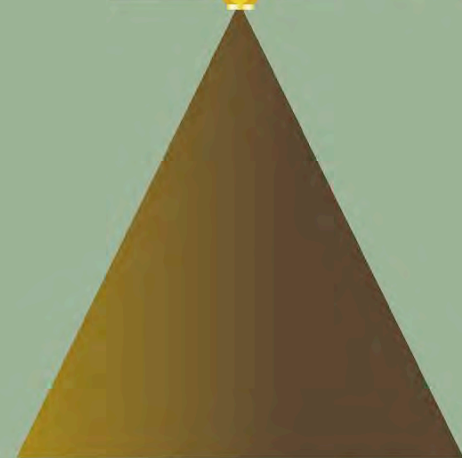
**3/16"**



**1/8"**



**1/16"**



**Nozzle Size**

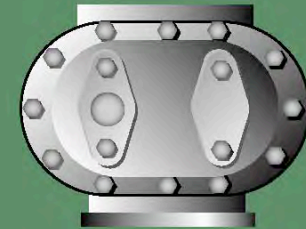
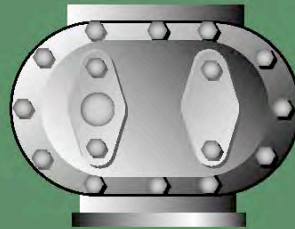
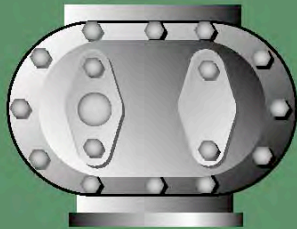
↑ FPM

50 GPM

100 GPM

150 GPM

Asphalt  
Pump



1/8"



1/8"



1/8"



**← 600 FPM**



**.05 G/Y<sup>2</sup>**

**← 300 FPM**



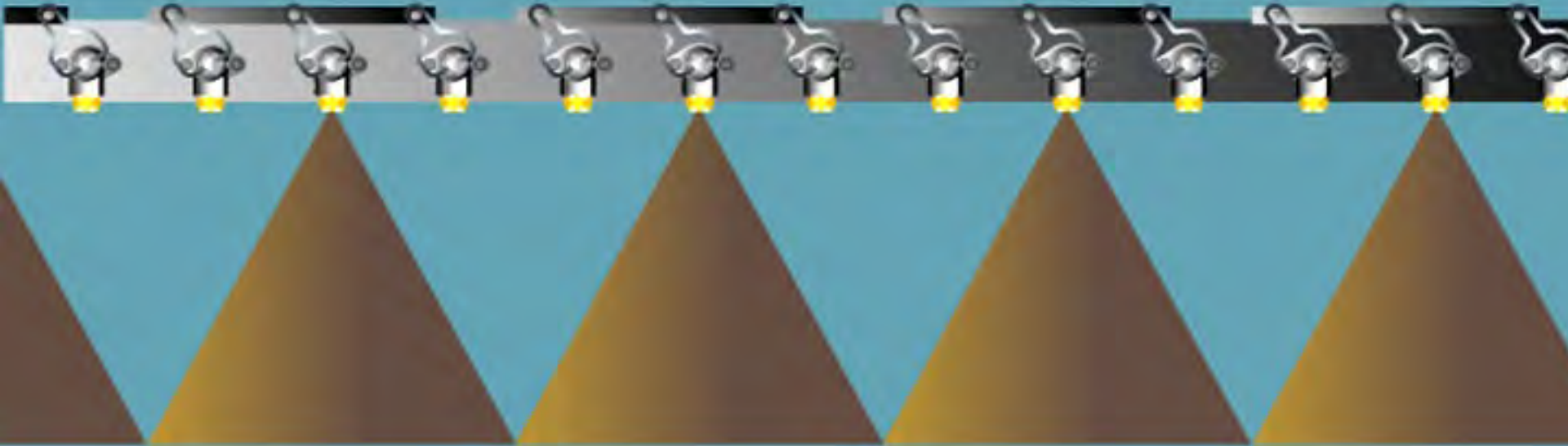
**.05 G/Y<sup>2</sup>**



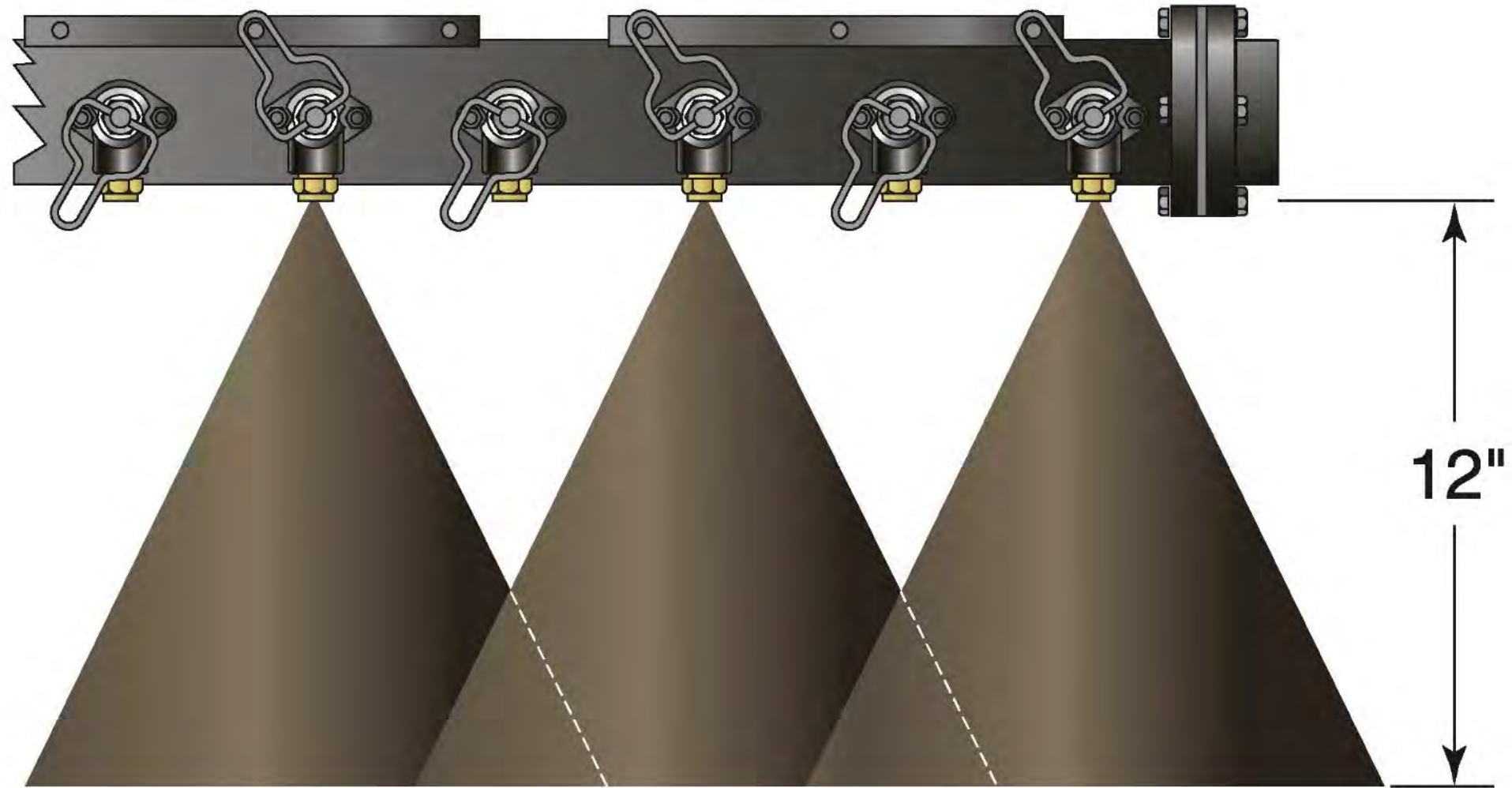


Let's Cheat  
the System

**1 NOZZLE  
PER FOOT**



# Every Other Nozzle









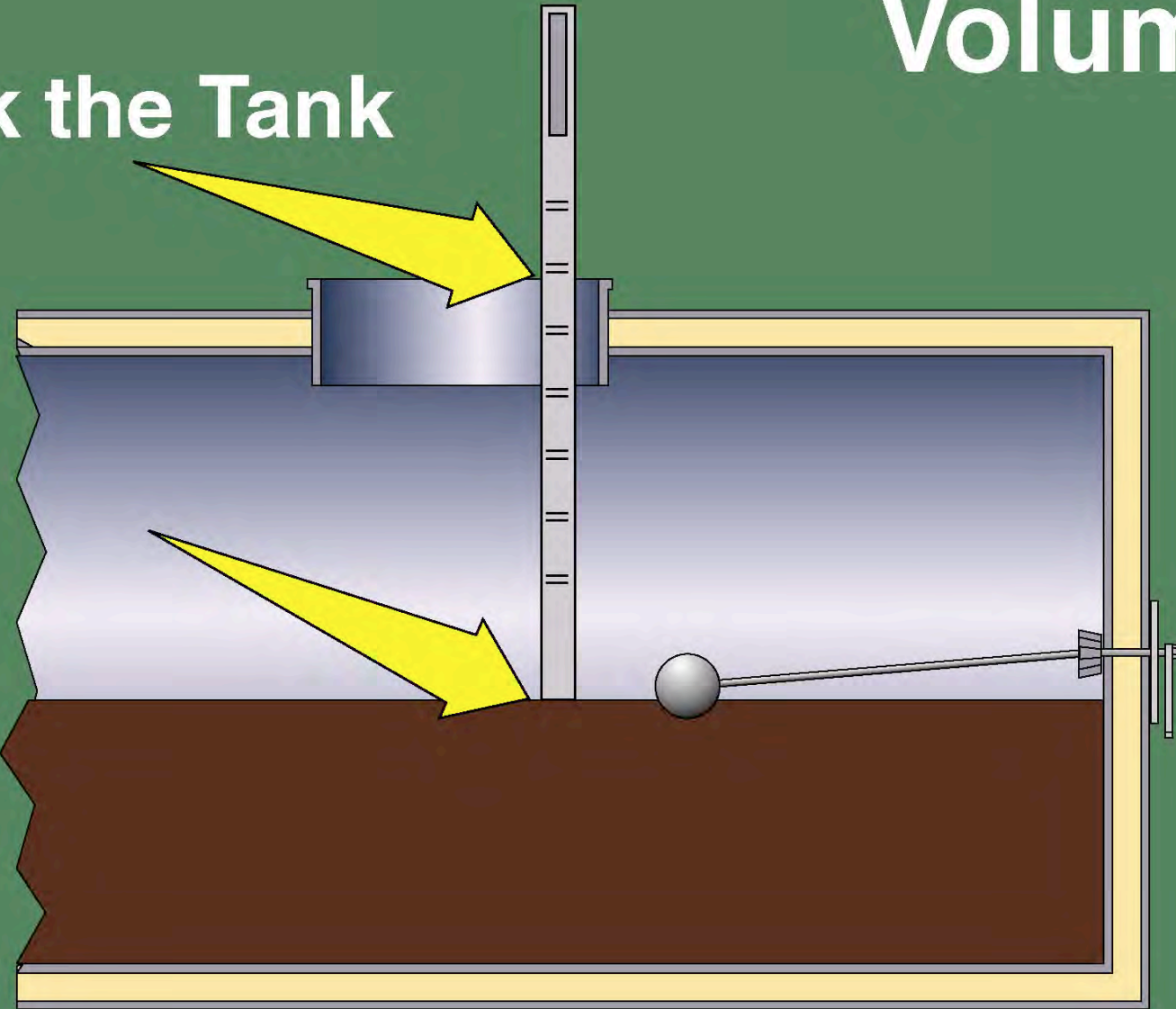


# CALIBRATING YOUR DISTRIBUTOR TRUCK

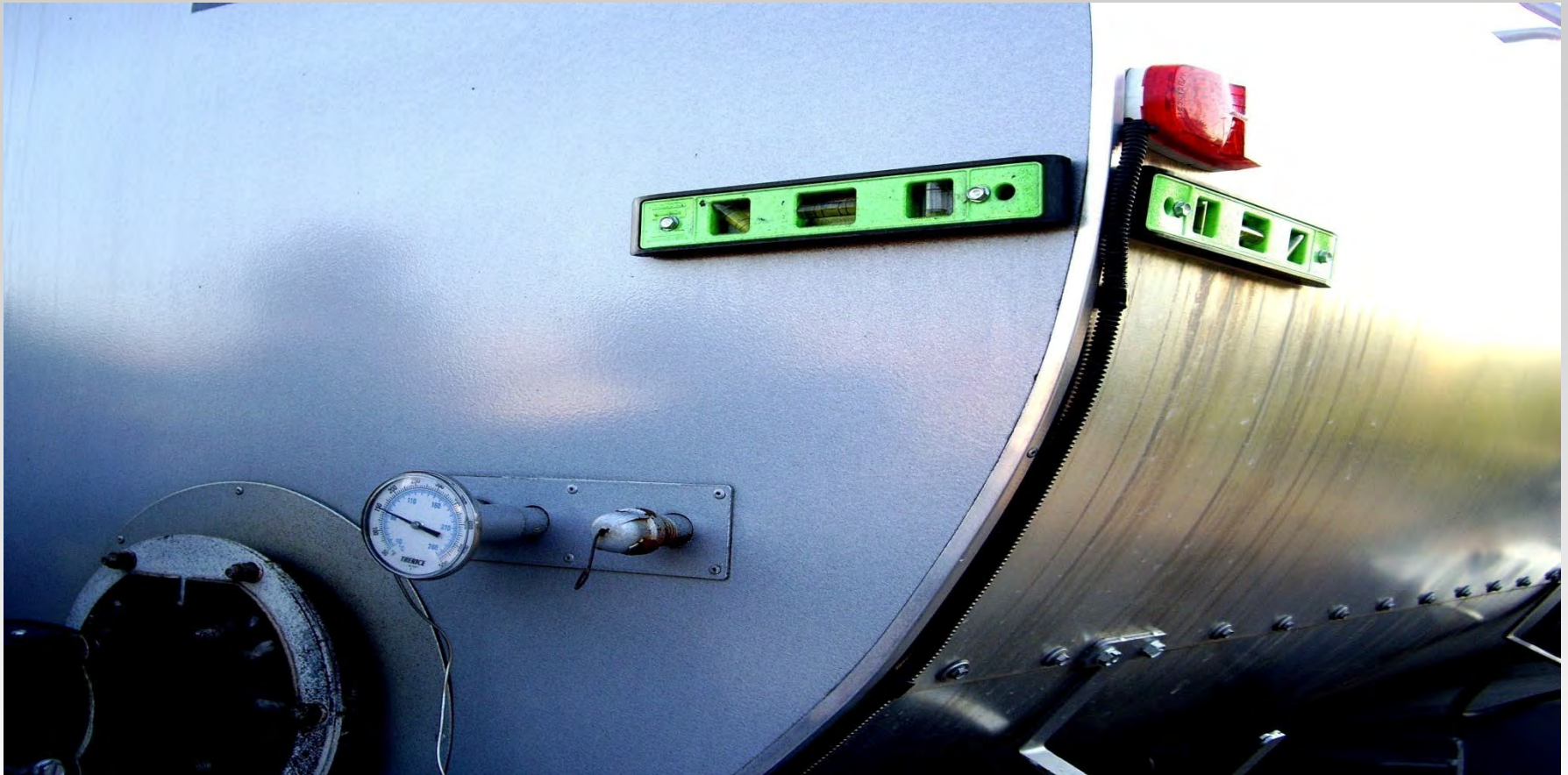
- What do we mean when we say calibrating your distributor?
- Why should you check your distributors calibration?
- How do you check your distributor calibration?
- What component are involved in calibrating your distributor truck?

# Volume

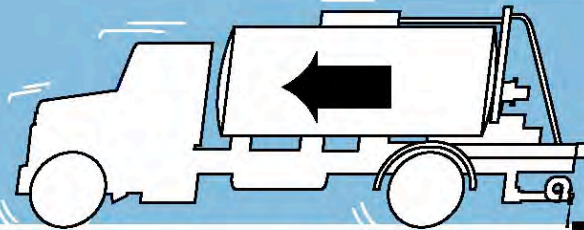
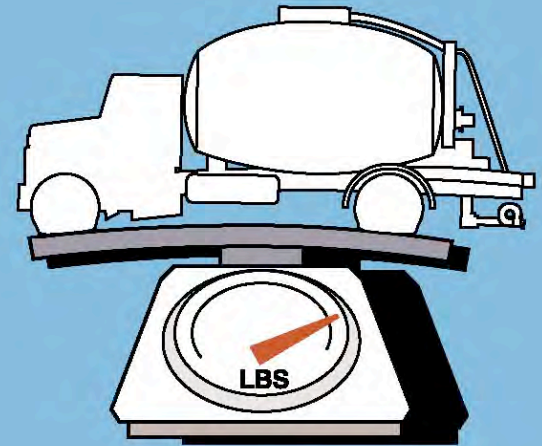
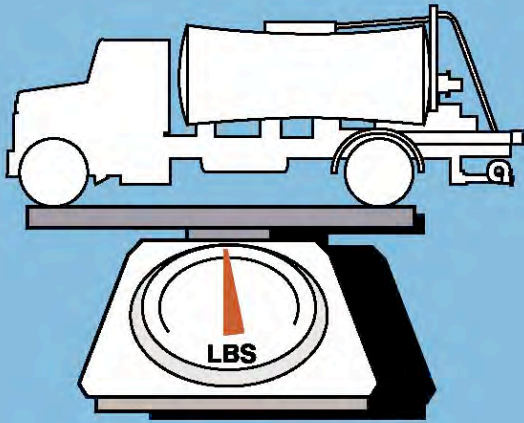
Stick the Tank



**Before checking your volume by sticking the tank , make sure Distributor is level**



# Weight



(g/y)

← # (Feet) →

# Longitudinal Rate Test



— Weight



# WHAT ARE WAYS TO CHECK YOUR DISTRIBUTOR CALIBRATION?

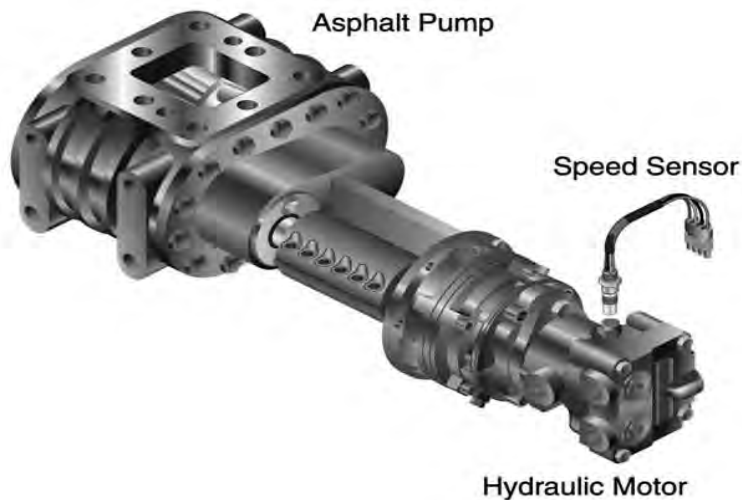


# PUMP AND RADAR

34

## Metering and Control System continued

### Magnetic Pump Speed Sensing



- Speed sensor pick-up counts the revolutions of the asphalt pump.
- Speed sensor is internal to the hydraulic motor.
- Pump output is displayed on an analog gage or sent directly to computer.
- Pump output is measured with Gallons Per Minute (GPM)

### Radar Ground Speed Sensing

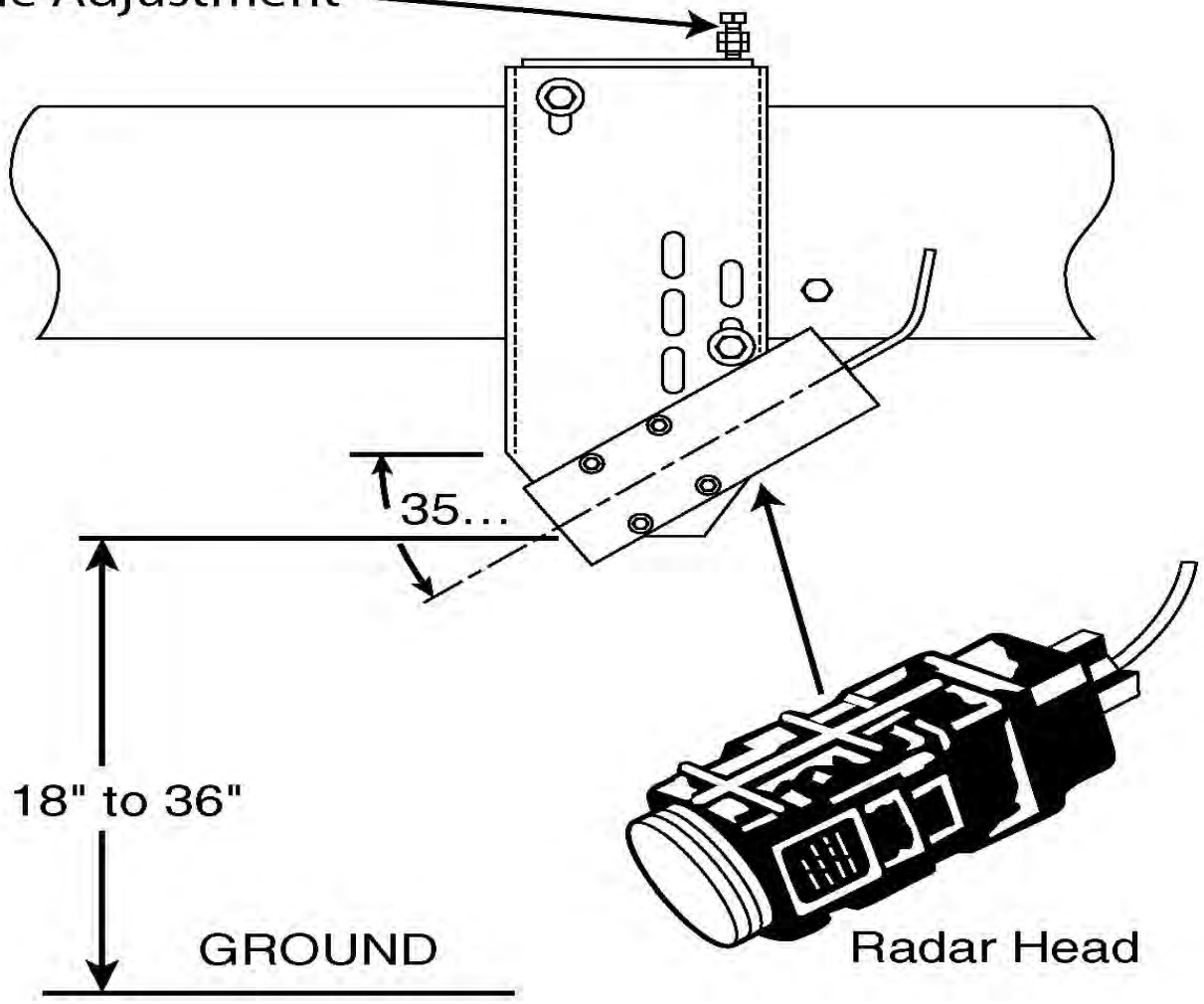


- Radar Speed sensing is **standard equipment**.
- Vehicle speed displayed on analog gauge or sent to computer.
- Precise measurement of ground speed and distance.
- No moving parts to wear out, less maintenance, and less chance of damage.
- Ground speed is measured in Feet Per Minute (FPM).

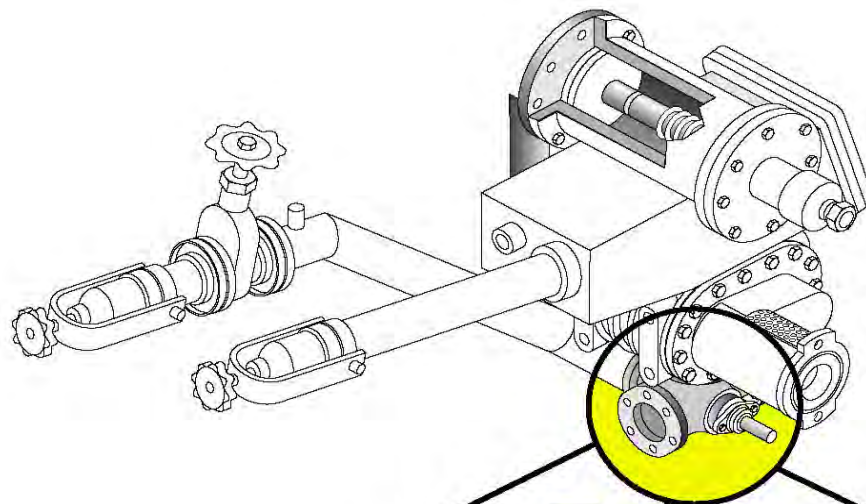


# RADAR ADJUSTMENT

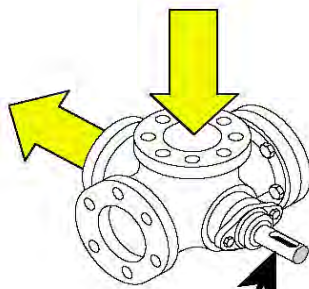
Angle Adjustment



# CONTROL VALVE TIMING

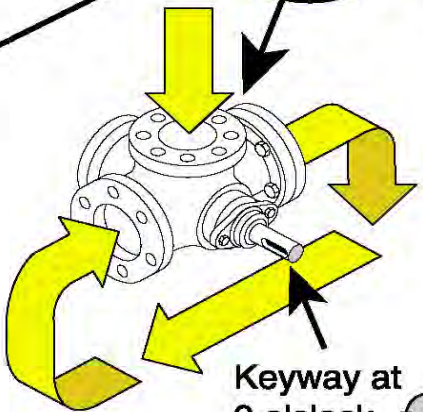


**Control Valve**



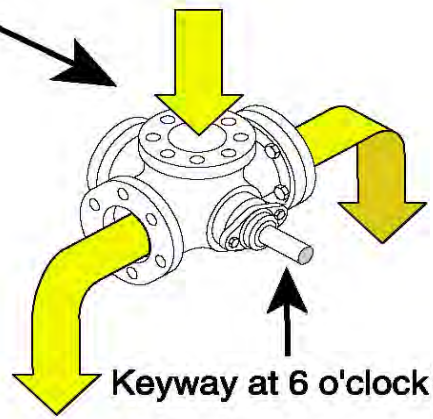
Keyway at 12 o'clock

**Circulate In Tank**



Keyway at 9 o'clock

**Circulate In Bar**



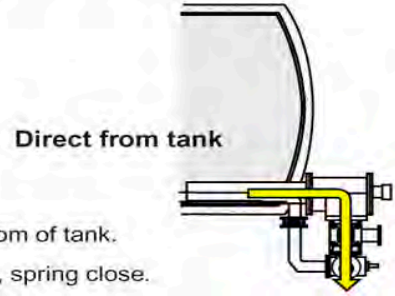
Keyway at 6 o'clock

**Spray**

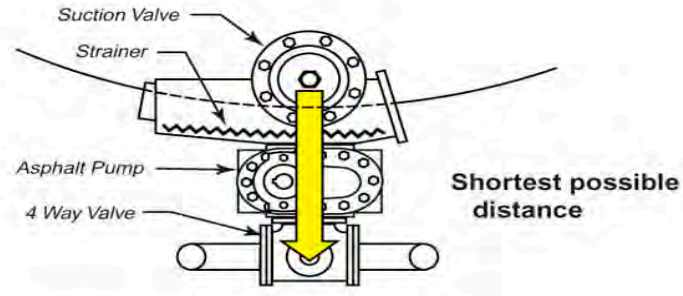
# STRAINER

## Circulating System continued

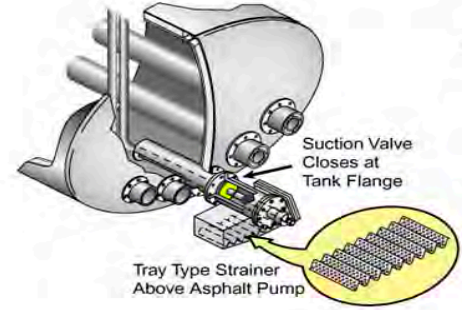
### Tank Suction Valve



- Located at bottom of tank.
- Air control open, spring close.
- No sump to trap liquid asphalt in the tank.
- Disc valve closes at tank flange. Always in contact with hot asphalt.
- No external line between valve and tank to freeze up with cold asphalt.

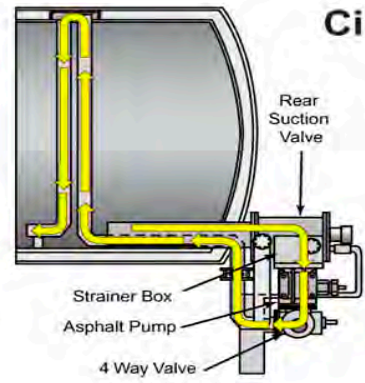


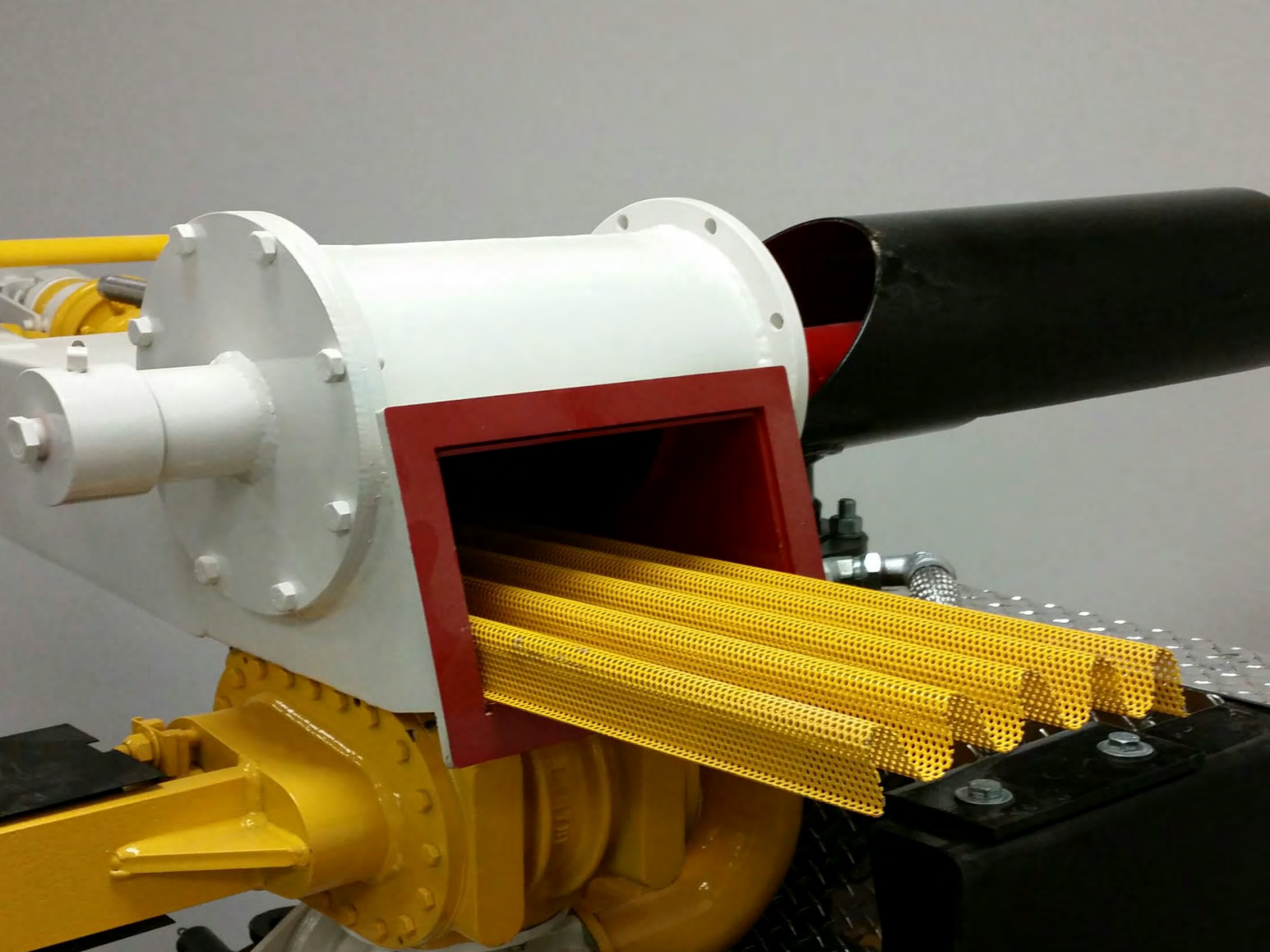
### Strainer



- Strainers, one tray type between tank and asphalt pump and between fill line and asphalt pump.
- All liquid asphalt goes through a strainer before it gets to the asphalt pump.

### Circulating In Tank











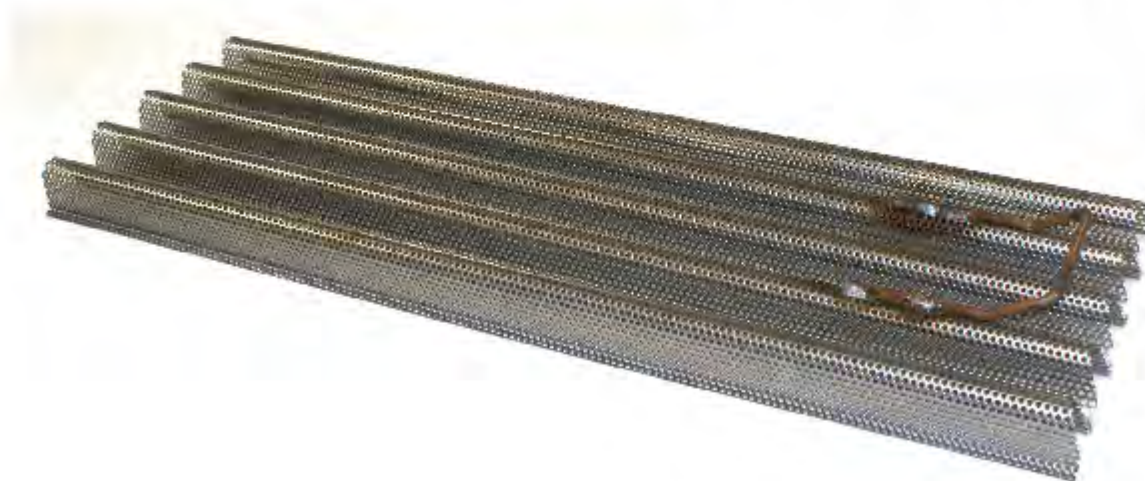




# Distributor Strainers

with Handles

		<u>1/8" holes</u>	<u>3/16" holes</u>	<u>1/4" holes</u>
BT-1	10 3/16" x 23 3/8"	3343191	3343243	3343245
S-2000/Centennial	10 3/16" x 29 1/2"	3342860	3342898	3343221
Big Contractor Package	10 3/16" x 33 3/8"	3343193	3343195	3343247
Cone Strainer	.....	3343190	3342667	3343285





Ref.	Part No.	Description	Application Gallons Per Square Yard	Application (Metric) Liters Per Square Meter	US Flow Gallons Per Minute Per Foot
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	3351013*	V Slot Tack Nozzle 1/16" Coin Slot	.05 - .20	.23 - 0.91	3.0 - 4.5
	3354904	V Slot Tack Nozzle 1/8" Counterbored	.05 - .20	.23 - 0.91	3.0 - 4.5
2	3351008	S36-4 V Slot	.10 - .35	.45 - 1.58	4.0 to 7.5
3	3351009	S36-5 V Slot	.18 - .45	.81 - 2.04	7.0 to 10.0
4	3352368	Multi-Material V Slot	.15 - .40	.68 - 1.81	6.0 to 9.0
5	3351015	3/32" Coin Slot	.15 - .40	.68 - 1.81	6.0 to 9.0
6	3352204	Multi-Material V Slot	.35 - .95	1.58 - 4.30	12.0 to 21.0
7	3355154	End Nozzle (use with 3352204 nozzle)	.35 - .95	1.58 - 4.30	12.0 to 21.0
8	3352205	Multi-Material V Slot	.20 - .55	.91 - 2.49	7.5 to 12.0
9	3352210	End Nozzle (use with 3352205 nozzle)	.20 - .55	.91 - 2.49	7.5 to 12.0
10	3351014	3/16" Coin Slot	.35 - .95	1.58 - 4.30	12.0 to 21.0
11	3351010	1/4" Coin Slot	.40 - 1.10	1.81 - 4.98	15.0 to 24.0

\* Special Order

# Distributor

- What Happened Here?



**Safe Operation  
Results From  
Knowledge of  
Materials and  
Equipment**



***NOT MY JOB!***





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