Evolution of the Snow Plow Cutting Edge and how to pick the right one for your operation
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We are cutting edge®

Bringing Technology to Snowplow Blades

20 years of research and development.

Technology provides convenience and increased productivity.

Ability to provide unique blade solutions for every application.
Presentation Talking Points

- History of snow plowing and how it has evolved
- Types of Blades being used today
- The factors that affect blade choice
History 1862-1913
Engine Driven Plows - 1913
Engine Driven Plows
1920’s – Salt Began Being Used

1959 – Satellites were beginning to be used to improve forecasting
Plowing Today
Snowplowing has became a major expense for municipalities
Different Types of Cutting Edges

Sorry, son... there's no app for that.
Blade Types

Steel
Carbide
Rubber
Specialty
Steel Cutting Edges

Multiple Types:
- Mild Steel – Carbon
- Heat Treated – Through Hardened
- Surface Hardened
- Boron
- Different Thicknesses
- Different Heights
Steel – Continued

- Go to blade for many municipalities
- Typically sold in bundles at the lowest price
- Lowest cost blades are typically 5/8 x 6 carbon steel blades
- Other steel compositions are more expensive, but provide more wear life
- Can cost more money in down time and blade changes than other options
Steel – Continued

- Tend to wear uneven
- Often used by municipalities who break blades on road obstructions or have a lot of gravel roads
- Most aggressive blades on the road
- Can cause the most damage due to the aggressiveness (ex. potholes)
Hardness vs. Toughness

Hardness: How well it holds its edge
Toughness: How well it handles impact before breaking

Graph showing the relationship between hardness and toughness.
Best Uses for Steel

- Smaller municipalities with low lane miles
- Smaller plows: Western, Boss, Fisher, Meyer
  Typically 9 ft. plows or smaller
- Areas that don’t get much snow and have less blade changes
- As a cover for carbide Insert blades
Tungsten Carbide Insert Blades

- Hardest
- Longest lasting
- Tungsten Carbide is brazed into a channel in middle of a steel blade
- Tungsten carbide is NOT all the same- it comes in different shapes, sizes and compositions.

Most often these blades will be installed with a steel blade going over the face of the blade.

The purpose is to protect the carbide insert from being knocked out.
Carbide – Continued

- Three and four foot blade sections – sometimes 5 ft. sections
- Standard ¾ x 6 – sometimes 7/8” thick
- More expensive, but provide longer wear life
- Save money in down time with less blade changes than other options
- Tend to wear more evenly
- Used by municipalities who DO NOT break blades on road obstructions
- When paired with a steel cover blade- create a sharp, aggressive edge
Best Uses for Carbide Insert

- Large municipalities with high lane miles
- Highway/Higher Speeds
- Larger plows
- Areas that get heavy snow fall
- Those that don’t break blades
- Municipalities sick of changing blades
Rubber Blades

Multiple Types:
• Punched vs. Slotted
• Fillers vs. Non-fillers
• Pressed vs. Extruded
• Rolled vs. Flat blade sections
• Different heights & lengths
Rubber – Continued

- Four, five, and six foot blade sections or full length blades
- Made to fit your plow
- Ten or eight inches in height and 1 ½ inches thick
- Protects the road surface
- Squeegee – great for slushy or light snow
- Slotted or punched based on preference
- When a backer blade is used moldboard support is provided and rolling is prevented
Best Uses for Rubber Blades

- Small municipalities with low lane miles
- Decorative or brick roads
- Low Speed
- Small and large plows
- Pusher boxes
- Areas that get light or slushy snow fall
- Areas that break blades or have many road obstructions
Specialty Blades

Underbody Blades  Articulating Blades
Underbody/Grader Blades

- Steel or carbide insert options
- Beveled or straight
- Different surface protection material added to the face of the blade for protection
- Can be used on underbody plows or grader applications
Articulating Blades

- High speed applications with minimal road obstructions
- Contour to the road clearing to the surface
- Different designs including carbide encased in rubber, ceramic rods, etc.
- Typically used on large plows by larger municipalities or DOT’s
- Some types will need a moldboard adapter blade to provide optimal performance
- Most expensive option, but often the most efficient/cost savings
Pictures of What Articulating Means
Products used to Enhance blade life for both steel and carbide blades
Examples of Blade Enhancement Products

Wear Bars

Moldboard Shoes
Additional Wear Parts

Pneumatic Wheels

Plow Guards
Factors in Determining Blade Type
Identifying your Struggles

- Wear life
- Blade breakage
- Material waste
- Performance
- Safety
- Downtime
- Small staff
- Budget dollars
Road Composition

- Gravel
- Chip Seal
- Concrete
- Asphalt
- Dirt
- Brick
Plow Speed
Expectation of Results
Plow Type

- Underbody
- One-Way
- Reversible
- Tow
- Wing
Takeaways

- Snow plowing has evolved over time
- There are different types of cutting edges!
- Each blade type performs differently based on the application.
- Factors to account for when choosing the blade type
- Understanding that there are products that help blades perform more efficiently
Questions?

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