

Evolution of the Snow Plow Cutting Edge and how to pick the right one for your operation



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Bringing Technology to Snowplow Blades



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EQUIPMENT COMPANY, INC.
38364

 **WINTER**
We are cutting edge®

Science. Research. Innovation.



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



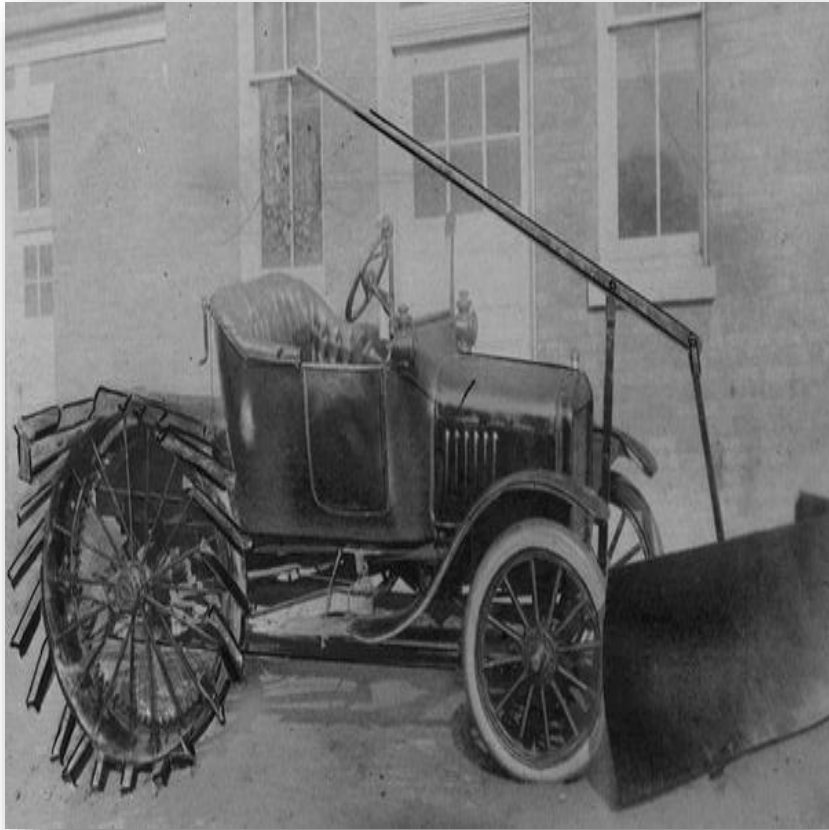
History 1862-1913



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 become a major expense for municipalities



Different Types of Cutting Edges



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

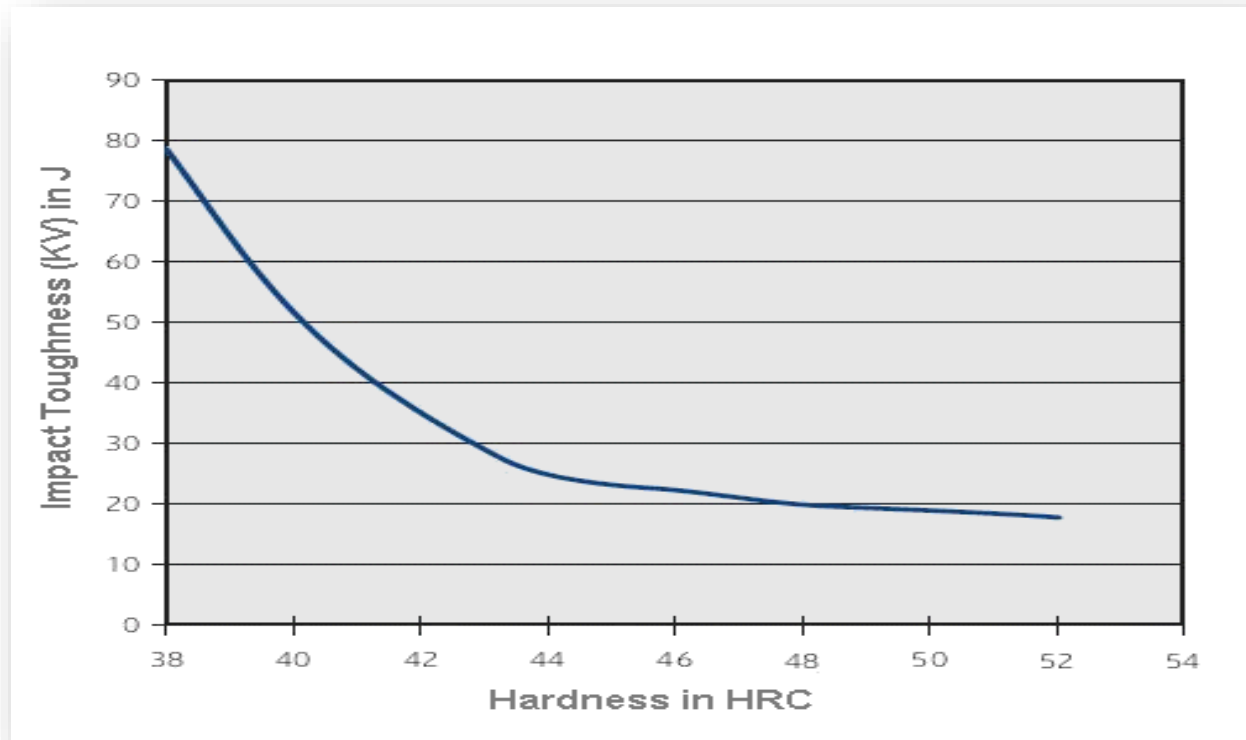
Steel – Continued

- 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

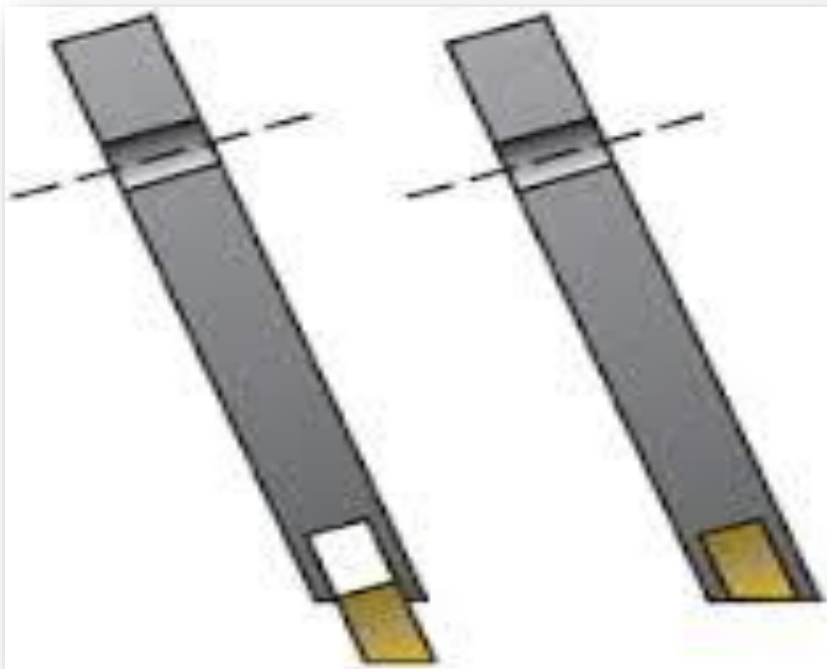
Best Uses for Steel

- **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

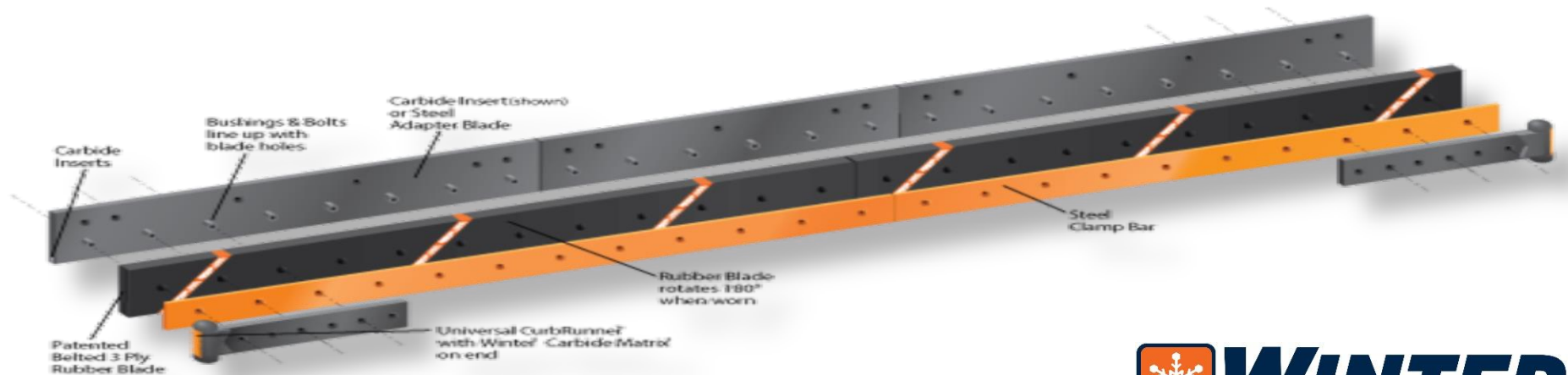
- Three and four foot blade sections – sometimes 5 ft. sections
- Standard $\frac{3}{4}$ x 6 – sometimes $\frac{7}{8}$ ” thick
- More expensive, but provide longer wear life
- Save money in down time with less blade changes than other options
- Tend to wear more evenly
- Used by municipalities who DO 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



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



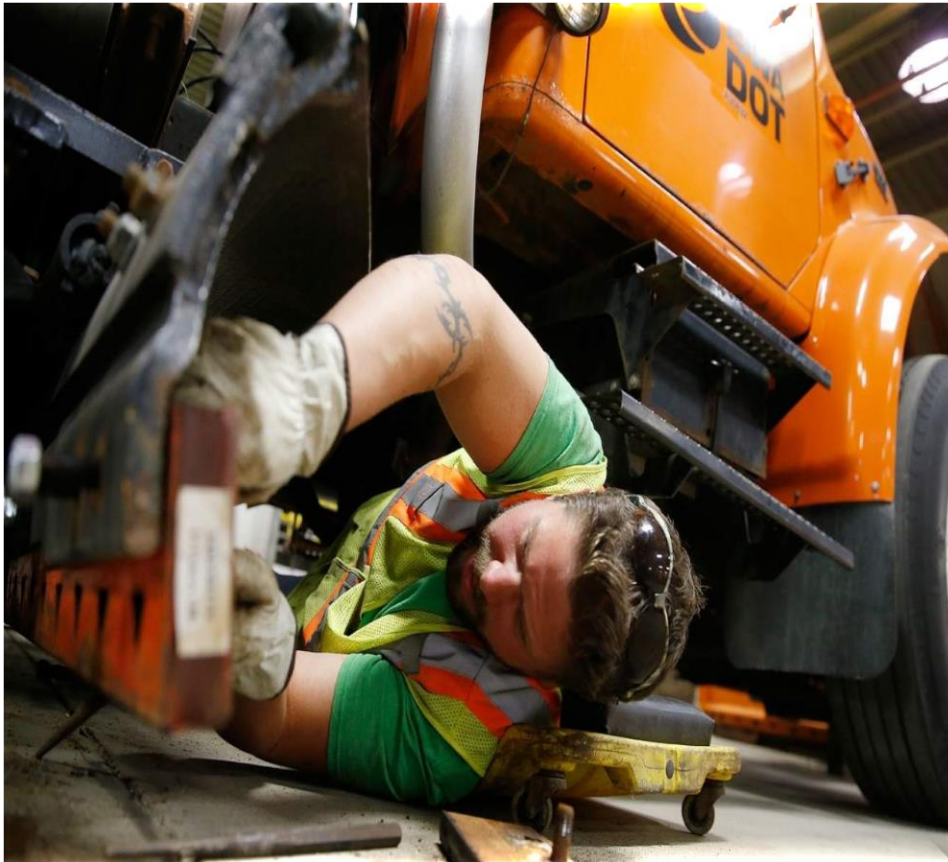
Articulating Blades

- 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



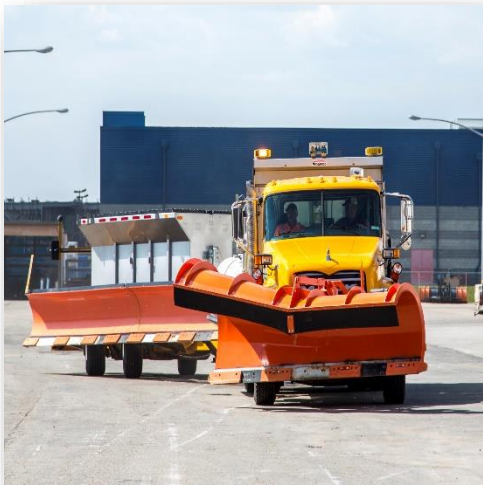
Plow Speed



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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Booth # 33

