JOMA® Product Specification

Articulating carbide inserted snowplow blade system.

Product Description:

The JOMA Articulating Blade System is an engineered carbide insert articulating blade system. The blade system consists of individual steel segments encased in rubber with steel bushings positioned on 12" centers for mounting to the plow. Each segment is milled to a special shape and profile and inserted with tungsten carbide inserts, brazed in place along a wear edge. The JOMA Articulating Blade System includes the articulating JOMA 6000 blades, carbide insert or steel backer blades, a pair of CurbRunners® to protect blade against premature wear, clamp bars for maximum blade performance and guard installation, Grade 8 steel plow & carriage bolts, nuts, washers, and installation instructions, all crated together in an easy to inventory palletized package.

Product Specification Details:

1. PACKAGING

1.1 All blade system components are to be provided in a single box or crate comprising of:

- a. All adapter blade sections manufactured per specifications.
- b. All JOMA blades manufactured per specifications.
- c. (2) JOMA CurbRunners®
- d. JOMA clamp bars
- e. (1) Grade 8 hardware kit including thread locking fasteners, flat washers, and plow bolts.

1.2 Installation instructions included in package.

1.3 The blade system package is to be securely banded to a pallet providing adequate protection for common freight carrier handling, transportation, and receiving.

1.4 Packaging will provide adequate protection from the elements incurred during normal transportation and storage.

2. JOMA BLADE

2.1 Dimensions: 6” high x 7/8” thick x 3’ or 4’ length

2.2 The 11/16” ID steel bushings are located 1.5” from the top of the blade on 12” centers to facilitate mounting to the plow.

2.3 Each blade will have blade orientation embossed in the rubber casing.

2.4 The grove for the carbide inserts shall be generally centered in the blade edge.

2.5 Tungsten Carbide Insert:

a. The tungsten carbide insert shall generally comprise the following total dimensions:
   - Length: 1” nominal
   - Width: 0.32” min.
   - Height: 0.95” nominal
   - Shape: Trapezoid

b. Each insert weighs approximately .152 lbs.

c. Tungsten carbide insert shall be of a grade containing approximately 89% by physical weight.

d. Each insert weighs approximately .152 lbs.

e. Tungsten and approximately 11% cobalt binder by weight.

f. Original compounding specific gravity equal to 14.35-14.60

g. The insert hardness shall be 87.5-88.8 Rockwell A scale

h. Transverse rupture strength of 351,000– 428,000 psi. PSI minimum

i. High shock resistant grade tungsten carbide.

j. Each finished segment will have 11 inserts (approximately 1.67 total pounds of carbide insert material per one foot section).

2.6 Brazing:

a. Inserts will be brazed on all sides using Nickel/Silver braze

b. Shear strength approximately 70,000 psi.

c. Maximum height difference between highest and lowest insert is 1/32” in each 11.22” segment.

2.7 Cast Steel Segment:

a. Cast steel 0.75” thick by 5” wide and 11.22” long.

b. The top 3.125” of the segment is stepped down to 0.625” thick.

c. The lower, inserted section remains 0.75” thick. Slots measuring 8.2mm wide x 24.5mm deep are milled in this portion to receive tungsten carbide inserts and braze matrix. The inserted section has a wear indicator line cast into the segment.

d. The segment is cast in a “horseshoe” design. The upper ears measure 2.55” wide (each with a 0.50” x 2.00” clip on the outside edges). The cutout measures 6.13” x 2.8125” with 1” rads in the two lower corners.

e. The upper ears are knurled to encourage a stronger bond with the rubber matrix.

2.8 Rubber Overmolding:

a. Typical Physical Properties:

Ultimate Elongation	582%
100% Modulus	276 psi
Tensile Strength	3113 psi
Shore A Durometer	60 pts.
Tear Strength	341 psi
Compression Set	26.5%
Brittleness	No cracks at -40C

3. CARBIDE ADAPTER BLADE

3.1 The blade shall be high strength structural grade A36 hot rolled flat steel.

3.2 Dimensions: 7” high x 3/4” thick x 3’ or 4’ length

3.3 Tolerance between hole spacing is +/- 1/16”, non-accumulative, from center to center across full length of blade.

3.4 The groove for the carbide inserts shall be generally milled in the center of the blade edge.

3.5 Blade to have two sets of holes, one for mounting to moldboard and another for mounting JOMA blade to adapter blade

3.6 TUNGSTEN CARBIDE INSERTS

a. The tungsten carbide insert shall comprise the following total dimensions:
- Length: 1” nominal
- Width: 0.36” min.
- Height: 0.63” max.
- Shape: Trapezoid

b. Tungsten carbide insert shall be of a grade containing approximately 89% tungsten and approximately 11% cobalt binder by weight.

c. Original compounding specific gravity equal to 14.35-14.6

d. The insert hardness shall be 87.5-88.8 Rockwell A scale

e. Transverse rupture strength of 351,000 PSI minimum.

3.7 BRAZING

a. Each blade shall contain an approximate 1” length of carbide inserts for each 1” length of blade.

b. The carbide inserts shall be placed in line within the center-milled groove.

c. The carbide inserts shall be brazed on all sides using sound brazing practice, having no evidence of voids, shims, or fillers

providing approximately 70,000 PSI shear strength.

4. CLAMP BAR

4.1 Clamp bar to be made of abrasion resistant steel.

4.2 Dimensions: 1/2" thick x 3" High.

4.3 Tolerance between hole spacing is +/- 1/16", non-accumulative, from center to center across full length of clamp bar.

4.4 Punched for a 5/8" Carriage bolt and matching the bushing pattern on the blade.

5. JOMA CURBRUNNER GUARDS

5.1 6" high x ¾" thick high impact, structural grade hot rolled steel bar.

5.2 Shall have a 3 ¼" x 13 ½" tapered section removed.

5.3 Drilled and square punched with countersink to accept a 5/8" plow bolt flush with the front mounting blade surface.

5.4 A-22 steel casting is welded on the end for curb protection. Steel casting weighs 6.5 lbs. and is 7" tall.

5.5 Guards have labels on the front mounting surface identifying the manufacturer and contact information.

5.6 Guards will be Class 7 Orange™ texture powder coated to provide corrosion resistance and safer handling.

6. MOUNTING HARDWARE

6.1 The mounting hardware will consist of high-quality thread locking components consisting of Grade 8 extended shoulder carriage bolts, Grade 8 plow bolts, all metal lock nuts and flat washers. All items to be pre-counted and sealed for corrosion resistance.

7. FINISHED PRODUCT

7.1 Finished blade will be Class 7 Orange ™ texture powder coated to provide

corrosion resistance and safer handling.

7.2 Front edge of blade will be identified to avoid improper installation.

7.3 Finished blade shall comply with standard blade manufacturing tolerances.

7.4 Manufacturer's literature shall be furnished as required.

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