MONTANA
Department of Transportation

MDT-BRG-015 04/23

Montana Department of Transportation
Bridge Bureau
Approved Construction Equipment List

Make:	*Wirtgen*
Model:	*W220*
Equipment Type:	*Mill Truck*
Contractor Modifications:	*None*

Interstate Approval Conditions

Approval Type	*Crossing Only*
Speed:	*No Restriction*
Weight:	*97,488 lb or less*
Traffic:	*Approved with regular traffic*
Location Restrictions:	*No Restriction*

Non-Interstate Approval Conditions

Approval Type	*DENIED*
Speed:	*DENIED*
Weight:	*DENIED*
Traffic:	*DENIED*
Location Restrictions:	*DENIED*

Comments:

Equipment configuration, weights, and specifications on following pages. Approval does not apply to load posted bridges. Other construction equipment is not allowed to operate on or cross bridge at the same time this equipment is on the bridge.

SUBMITTAL

KNIFE RIVER
AN MDU RESOURCES COMPANY

Billings Division
PO Box 80066, Billings MT 59108

To: James Stevenson
Owner: MDT
E-Mail jlstevenson@mt.gov

Job name:	**Mossmain**
Contract No.	**05422**
KRY Job No.	28221021

From: Van Hildreth
E-Mail van.hildreth@kniferiver.com

SUBMITTAL NUMBER: S-042

DATE: 03/31/23

Total pages INCLUDING this sheet 7

SUBJECT: ACEL Request - Wirtgen W220 Milling Machine

SPEC:

SUBMITTAL FORWARDED:

Please find attached information for ACEL approval. NOTE: this machine is similar to Wirtgen 2100 currently on ACEL.

REPLY FROM ENGINEER: **Date:**

No Exceptions Taken: ☐	Rejected: ☐	Resubmittal Not Required: ☐
Make Corrections Noted: ☐	Comments Attached: ☐	Resubmit in Entirety: ☐
Revision Needed: ☐		Revise & Resubmit Noted Items: ☐
		Submit Specified Items: ☐

This review is for general conformance with design concept only. Any deviation from plans or specifications not clearly noted by the Contractor has not been reviewed. Review by the engineer shall not serve to relieve the Contractor of the contractual responsibility for any error or deviation from the contract requirements.

MDT

Architect, Designer, or Engineer

cc: Submittal Folder

Wirtgen W220 – Milling Machine

ACEL request

- Equipment manufacturer's product specifications - Attached

- Detailed equipment dimensions and data
  - Vehicle width 10.3 ft
  - Vehicle length Conveyor folded: 44.9', Conveyor extended: 54.2'
  - Number of axles Track assembly front and rear, each assembly has 2 "axles"
  - Track or wheel dimensions Track Height: 30 in, Track length: 79 in, Pad width: 15 in
  - Track or wheel spacing (width) 54" center to center
  - Track or wheel gage spacing (centerline to centerline of wheel lines)
    - Center front assembly to Center rear assembly: 17.6'
    - 1st to 2nd axle center: 3.8', 2nd to 3rd: 13.8', 3rd to 4th: 3.8'
  - Gross vehicle weight rating Operating Weight: 85,650 lbs
  - Hauling capacity (weight) Does not haul

- Maximum operating speed 3.3 MPH

- Potential dynamic or vibratory effects of vehicle during operation (note that some vehicle attributes may preclude inclusion onto the ACEL) None

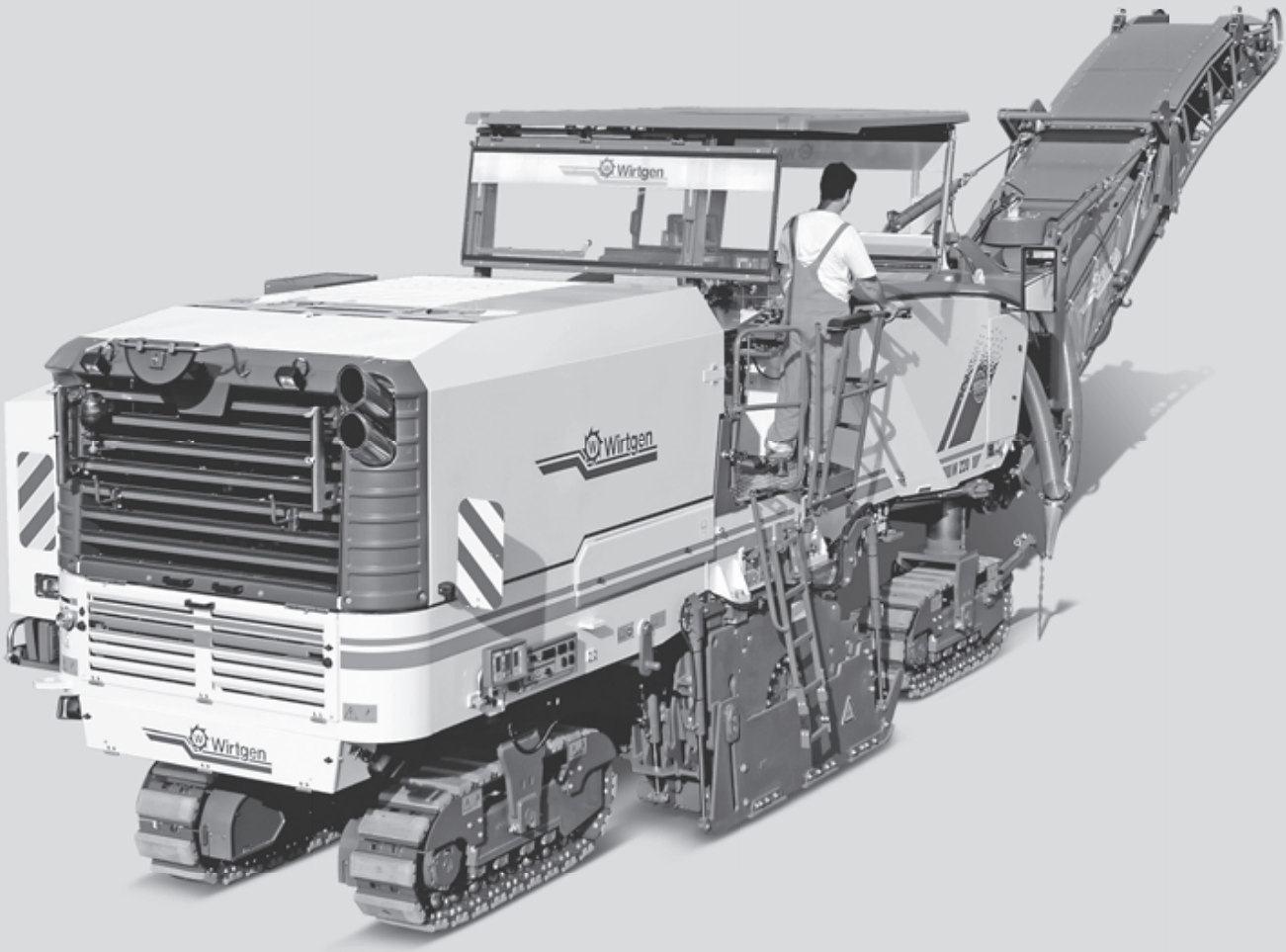
- Information on any equipment modifications for your vehicle (note that some modifications may preclude inclusion onto the ACEL) Optional equipment as noted in Spec sheet, operating weight indicated above INCLUDES optional equipment.

- Contractor's contact information for ACEL analysis-related correspondence or follow-up information. Van Hildreth, Knife River, van.hildreth@kniferiver.com 406.672.0954

Wirtgen W220 with 8' 2" Wide Cutter

Technical specification

Cold Milling Machine W 220

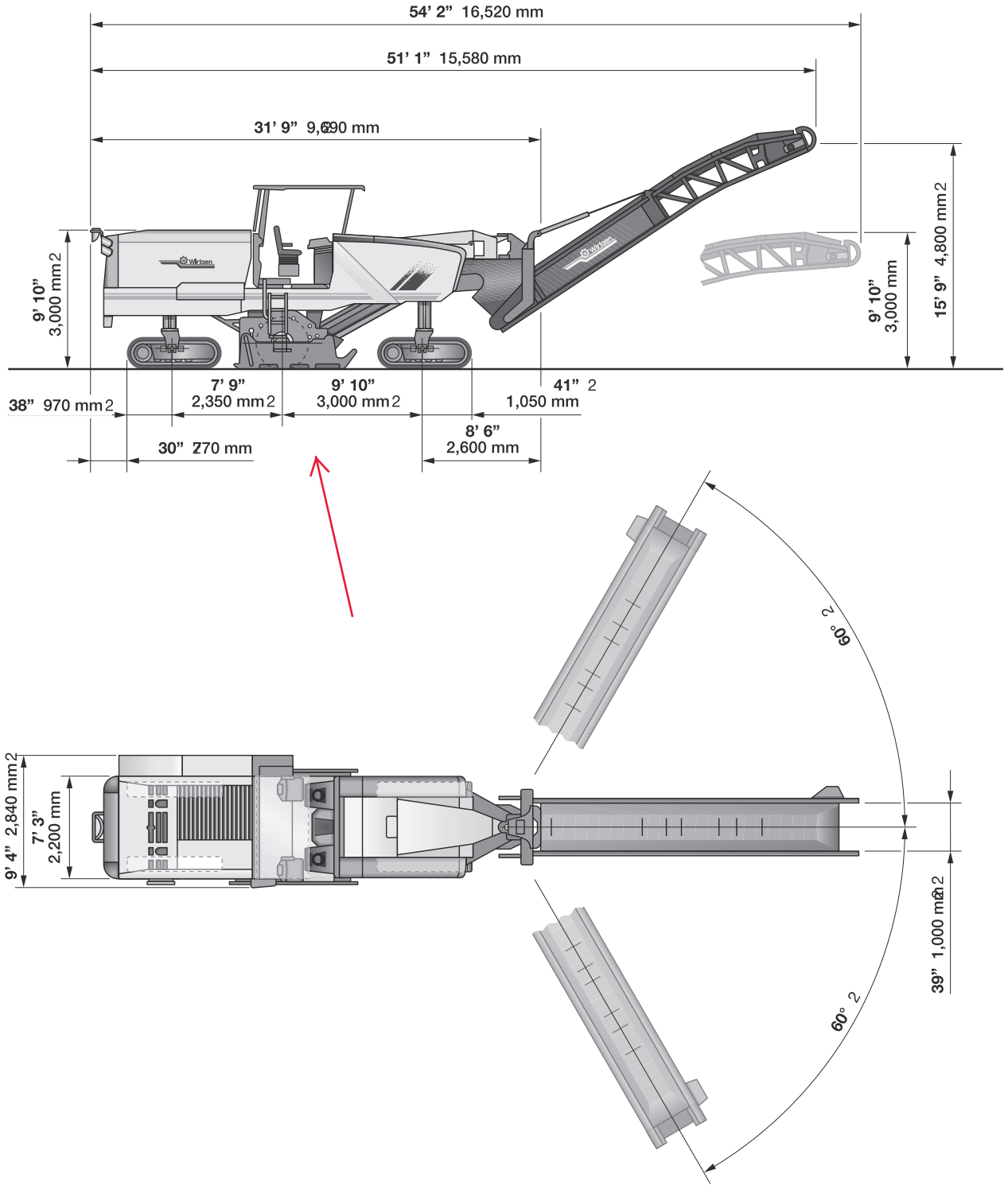


e hni a s e ifi ati n T

T	Cold milling machine W 220	
Milling drum	**Standard FB 2,200**	**Option FB 2,500**
Milling width	**7’ 3”** 2,200 mm T	**8’ 2”** 2,500 mm
Milling depth*1 T	**0–14”** 0–350 mm T	**0–14”** 0–350 mm
Tool spacing T	**5/8”** 15 mm T	**5/8”** 15 mm
Number of tools T	**188** T	**211**
Drum diameter with tools T	**45”** 1,140 mm T	**45”** 1,140 mm
Engine		
Manufacturer T	**Caterpillar**	
Type T	**C18 ATAAC**	
Cooling	**Water**	
Number of cylinders T	**6**	
Rated power at 2,100 min^{-1} T	**571 kW/766 HP/777 PS**	
Maximum power at 1,800 min^{-1}	**571 kW/766 HP/777 PS**	
Operating power at 1,600 min^{-1} T	**552 kW/740 HP/751 PS**	
Displacement T	**4.8 gal** 18.1 l	
Fuel consumption at rated power T	**37.5 gal** 142 l/h	
Fuel consumption in field mix T	**15 gal** 57 l/h	
Emission standards T	**no EU regulation/US Tier 2**	
Electrical system T	**24 V**	
Filling capacities		
Fuel tank	**386 gal** 1,460 l	
Hydraulic fluid tank T	**79 gal** 300 l	
Water tank T	**1,189 gal** 4,500 l	
Driving properties		
Travel speed in milling and travel gear, max T	**0–288 ft/min** 5.3 km/h T	
Crawler tracks		
Crawler tracks front and rear (L x W x H) T	**6’ 7” x 15” x 30”** 2,000 x 370 x 750 mm	
Loading the milled material		
Belt width of primary conveyor T	**43”** 1,100 mm	
Belt width of discharge conveyor	**39”** 1,000 mm	
Theoretical capacity of discharge conveyor T	**603.7 yd^3/h** 552 m^3/h	
Shipping dimensions		
Machine, milling width FB 2,200 (L x W x H)	**31’ 4” x 9’ 4” x 9’ 10”** 9,700 x 2,840 x 3,000 mm	
Machine, milling width FB 2,500 (L x W x H) T	**31’ 4” x 10’ 4” x 9’ 10”** 9,700 x 3,140 x 3,000 mm	
Discharge conveyor (L x W x H) T	**26’ 9” x 5’ 3” x 4’ 11”** 8,150 x 1,600 x 1,500 mm T	

*1 = he maximum mi ing de th may deviate fr m the va ue indi ated, due t t eran es and wear. T

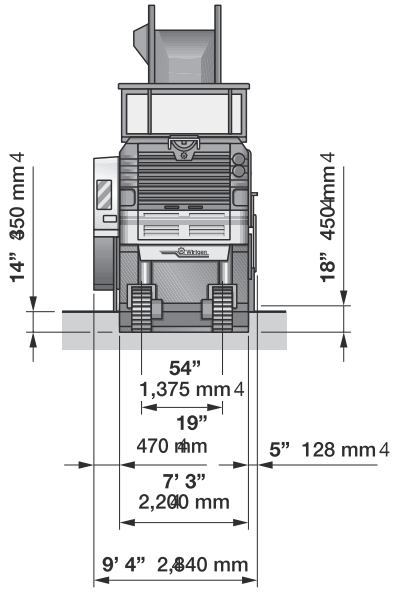
Dimensions in American standard and mm2



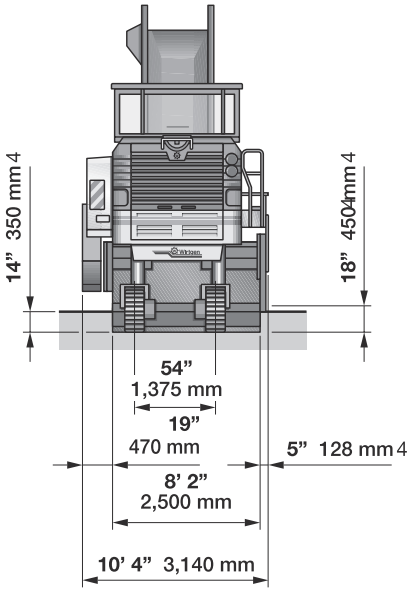
	Machine weights W 220
Empty weight of machine without filling media	**73,634 lbs** 33,400 kg
Operating weight, CE *	**80,160 lbs** 36,360 kg
Operating weight, max. (full tanks, full range of equipment), milling width 7’ 3” (2,200 mm)	**97,488 lbs** 44,220 kg
	Weights of filling media
Water tank filling	**9,921 lbs** 4,500 kg
Diesel tank filling (6.93 lbs/gal (0.83 kg/l))	**2,667 lbs** 1,210 kg
	Optional equipment features increasing/reducing empty weight
Driver and tools	
Driver	**165 lbs** 75 kg
Weight of 5 cutting tool containers	**276 lbs** 125 kg
On-board tools	**66 lbs** 30 kg
Optional milling drum assemblies in lieu of standard	
Milling drum housing, milling width 7’ 3” (2,200 mm), FCS-L	**2,910 lbs** 1,320 kg
Milling drum housing, milling width 7’ 3” (2,200 mm), extendible	**1,168 lbs** 530 kg
Milling drum housing, milling width 8’ 2” (2,500 mm)	**2,293 lbs** 1,040 kg
Optional milling drums in lieu of standard	
Milling drum, milling width 7’ 3” (2,200 mm), tool spacing 5/8” (15 mm), extendible	**705 lbs** 320 kg
Milling drum, milling width 8’ 2” (2,500 mm), tool spacing 5/8” (15 mm)	**1,609 lbs** 730 kg
Milling drum, milling width 7’ 3” (2,200 mm), tool spacing 1/4”x2 (6x2 mm), FCS-L	**1,080 lbs** 490 kg
Milling drum, milling width 7’ 3” (2,200 mm), tool spacing 5/16” (8 mm), FCS-L	**1,631 lbs** 740 kg
Milling drum, milling width 7’ 3” (2,200 mm), tool spacing 5/8” (15 mm), FCS-L	**-265 lbs** -120 kg
Milling drum, milling width 7’ 3” (2,200 mm), tool spacing 1” (25 mm), FCS-L	**-904 lbs** -410 kg
Optional additional equipment	
Operator’s platform with comfortable seats in lieu of standard	**551 lbs** 250 kg
Canopy in lieu of standard	**595 lbs** 270 kg
Cabin in lieu of standard	**1,323 lbs** 600 kg
Folding conveyor in lieu of standard	**1,257 lbs** 570 kg
VCS – Vacuum Cutting System	**331 lbs** 150 kg
Supplementary weight for flexible use	**3,307 lbs** 1,500 kg

* = weight of machine with half-full water tank, half-full fuel tank, driver (165 lbs (75 kg)) and on-board tools

Rear view
Dimensions in American standard and mm



Milling width 7’ 3” (2,200 mm)



Milling width 8’ 2” (2,500 mm)

Machine transport with optional canopy and hydraulic folding conveyor
Dimensions in American standard and mm

