

## EQUIPMENT SPECIFICATIONS

### TANDEM MILL

20" & 53" X 66" FOUR STAND TANDEM COLD MILL - "AVAILABLE IN ENTIRETY OR PIECEMEAL"  
TDI REFERENCE NUMBER: 64223

MANUFACTURER: Bliss  
QUANTITY: 1.00

#### GENERAL SPECIFICATIONS:

MANUFACTURER: Bliss

ENTRY MATERIAL: Carbon Steel

ENTRY PRODUCT DIMENSIONS:

WIDTH MINIMUM (INCHES):	24 Inches (609.600 mm)
WIDTH MAXIMUM (INCHES):	60 Inches (1,524.000 mm)
THICKNESS MINIMUM (INCHES):	0.015 Inches (0.378 mm)
THICKNESS MAXIMUM (INCHES):	0.185 Inches (4.699 mm)

FINISHED PRODUCT: Strip

STRIP:

WIDTH MINIMUM (INCHES):	24 Inches (609.600 mm)
WIDTH MAXIMUM (INCHES):	60 Inches (1,524.000 mm)
COIL O.D. MAXIMUM (INCHES):	72 Inches (1,828.800 mm)
COIL I.D. MINIMUM (INCHES):	19 Inches (482.600 mm)
COIL I.D. MAXIMUM (INCHES):	28 Inches (711.200 mm)
COIL WEIGHT (LBS.):	60,000 Pounds
COIL WEIGHT (TONS):	30 Tons (27.216 mt)
ANNUAL PRODUCTION (TPY):	1.145,000 Tpy

ROLLING MILL USE: Cold Reduction

COIL PROCESSOR:

APPLICABLE:	Yes
DESCRIPTION:	Coil Box

UNCOILER / PAYOFF REEL:

TYPE:	Dual Stub Driven/hyd. clutch
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MILL STAND 1:

POST SIZE:

THICKNESS (INCHES): 32.500 Inches (825.500 mm)

WIDTH (INCHES): 26.500 Inches (673.100 mm)

WINDOW SIZE:

HEIGHT (INCHES): 212 Inches (5,384.800 mm)

WIDTH (INCHES): 57.500 Inches (1,460.500 mm)

WORK ROLLS:

ROLL DIAMETER (INCHES): 19.775 Inches (502.285 mm)

ROLL FACE (INCHES): 66 Inches (1,676.400 mm)

BEARING TYPE: Roller

BACK UP ROLLS:

ROLL DIAMETER (INCHES): 53 Inches (1,346.200 mm)

ROLL FACE (INCHES): 66 Inches (1,676.400 mm)

BEARING TYPE: Oil Film

DRIVEN:

Work rolls

DRIVE SPINDLE TYPE:

Geared

SHOEPLATE:

SHOE / SOLE PLATE: Yes

SCREWDOWN:

EXISTS: Yes

COMPLETE: Yes

SCREWDOWN TYPE: Hydraulic

LINE SPEED (FPM):

1,370 Fpm (417.576 mpm)

REDUCER:

MILL DRIVE TYPE: Combination Pinion Stand/Gear Reducer

HORSEPOWER: 3,000 HP (2,238.000 kw)

INPUT RPM: 300/670 Rpm

GEAR RATIO: 2.625:1

BEARING TYPE: Roller

OUTPUT SHAFT CENTERS (INCHES): 20 Inches (508.000 mm)

MAIN MILL MOTOR:

QUANTITY: 2

HORSEPOWER: 1,500 HP (1,119.000 kw)

MOTOR MANUFACTURER: Westinghouse

FRAME: MCF

RPM: 300/670 Rpm

VOLTS: 750

CURRENT: DC

MILL STAND 2:

POST SIZE:

THICKNESS (INCHES): 32.500 Inches (825.500 mm)

WIDTH (INCHES): 26.500 Inches (673.100 mm)

WINDOW SIZE:

HEIGHT (INCHES): 212 Inches (5,384.800 mm)

WIDTH (INCHES): 57.500 Inches (1,460.500 mm)

WORK ROLLS:

ROLL DIAMETER (INCHES):	20.225 Inches (513.715 mm)
ROLL FACE (INCHES):	66 Inches (1,676.400 mm)
BEARING TYPE:	Roller
BACK UP ROLLS:	
ROLL DIAMETER (INCHES):	53 Inches (1,346.200 mm)
ROLL FACE (INCHES):	66 Inches (1,676.400 mm)
BEARING TYPE:	Oil Film
DRIVEN:	Work rolls
DRIVE SPINDLE TYPE:	Geared
SHOEPLATE:	
SHOE / SOLE PLATE:	Yes
SCREWDOWN:	
EXISTS:	Yes
COMPLETE:	Yes
SCREWDOWN TYPE:	Hydraulic
LINE SPEED (FPM):	1,875 Fpm (571.500 mpm)
REDUCER:	
MILL DRIVE TYPE:	Combination Pinion Stand/Gear Reducer
HORSEPOWER:	4,500 HP (3,357.000 kw)
INPUT RPM:	200/450 Rpm
GEAR RATIO:	1.289:1
BEARING TYPE:	Roller
OUTPUT SHAFT CENTERS (INCHES):	22 Inches (558.800 mm)
MAIN MILL MOTOR:	
QUANTITY:	2
HORSEPOWER:	2,250 HP (1,678.500 kw)
MOTOR MANUFACTURER:	Westinghouse
FRAME:	MCF
RPM:	200/450 Rpm
VOLTS:	750
CURRENT:	DC
MILL STAND 3:	
POST SIZE:	
THICKNESS (INCHES):	32.500 Inches (825.500 mm)
WIDTH (INCHES):	26.500 Inches (673.100 mm)
WINDOW SIZE:	
HEIGHT (INCHES):	212 Inches (5,384.800 mm)
WIDTH (INCHES):	57.500 Inches (1,460.500 mm)
WORK ROLLS:	
ROLL DIAMETER (INCHES):	20.675 Inches (525.145 mm)
ROLL FACE (INCHES):	66 Inches (1,676.400 mm)
BEARING TYPE:	Roller
BACK UP ROLLS:	
ROLL DIAMETER (INCHES):	53 Inches (1,346.200 mm)
ROLL FACE (INCHES):	66 Inches (1,676.400 mm)
BEARING TYPE:	Oil Film
DRIVEN:	Work rolls

DRIVE SPINDLE TYPE:	Geared
SHOEPLATE:	
SHOE / SOLE PLATE:	Yes
SCREWDOWN:	
EXISTS:	Yes
COMPLETE:	Yes
SCREWDOWN TYPE:	Hydraulic
LINE SPEED (FPM):	2,365 Fpm (720.852 mpm)
REDUCER:	
MILL DRIVE TYPE:	Combination Pinion Stand/Gear Reducer
HORSEPOWER:	4,500 HP (3,357.000 kw)
INPUT RPM:	200/450 Rpm
GEAR RATIO:	1.020:1
BEARING TYPE:	Roller
OUTPUT SHAFT CENTERS (INCHES):	22 Inches (558.800 mm)
MAIN MILL MOTOR:	
QUANTITY:	2
HORSEPOWER:	2,250 HP (1,678.500 kw)
MOTOR MANUFACTURER:	Westinghouse
FRAME:	MCF
RPM:	200/450 Rpm
VOLTS:	750
CURRENT:	DC
MILL STAND 4:	
POST SIZE:	
THICKNESS (INCHES):	32.500 Inches (825.500 mm)
WIDTH (INCHES):	26.500 Inches (673.100 mm)
WINDOW SIZE:	
HEIGHT (INCHES):	212 Inches (5,384.800 mm)
WIDTH (INCHES):	57.500 Inches (1,460.500 mm)
WORK ROLLS:	
ROLL DIAMETER (INCHES):	21.250 Inches (539.750 mm)
ROLL FACE (INCHES):	66 Inches (1,676.400 mm)
BEARING TYPE:	Roller
BACK UP ROLLS:	
ROLL DIAMETER (INCHES):	53 Inches (1,346.200 mm)
ROLL FACE (INCHES):	66 Inches (1,676.400 mm)
BEARING TYPE:	Oil Film
DRIVEN:	Work rolls
DRIVE SPINDLE TYPE:	Geared
SHOEPLATE:	
SHOE / SOLE PLATE:	Yes
SCREWDOWN:	
EXISTS:	Yes
COMPLETE:	Yes
SCREWDOWN TYPE:	Hydraulic
LINE SPEED (FPM):	3,110 Fpm (947.928 mpm)

REDUCER:	
MILL DRIVE TYPE:	Combination Pinion Stand/Gear Reducer
HORSEPOWER:	4,500 HP (3,357.000 kw)
INPUT RPM:	200/450 Rpm
GEAR RATIO:	1.289:1
BEARING TYPE:	Roller
OUTPUT SHAFT CENTERS (INCHES):	22 Inches (558.800 mm)
MAIN MILL MOTOR:	
QUANTITY:	2
HORSEPOWER:	2,250 HP (1,678.500 kw)
MOTOR MANUFACTURER:	Westinghouse
FRAME:	MCF
RPM:	200/450 Rpm
VOLTS:	750
CURRENT:	DC
EXIT TENSION REEL:	
QUANTITY:	1
TYPE:	Expanding Mandrel
MANDREL DIMENSIONS:	
DIAMETER (INCHES):	19 - 30 Inches
FACE (INCHES):	72 Inches (1,828.800 mm)
CAPACITY (TONS):	30 Tons (27.216 mt)
GEAR RATIO:	1.430
DRIVE TYPE:	Electro Mechanical
OUTBOARD BEARING SUPPORT:	
APPLICABLE:	Yes
BEARING SUPPORT TYPE:	Floor Mount
BELT WRAPPER:	
APPLICABLE:	Yes
TYPE:	Belt Hydraulic
COMMENTS:	Mill Installed 1954 Upgrades: 1990 - Bliss HAGC On All 4 Stands w/Long Stroke Cylinders. 1990 - Bliss Work Roll Bending all Stands, Roll Crowning, Shape Roll, WR Change Sled Stand 4, 2006 - ABB Shape Roll Control, Fluids Filtration System. Mill Last Operated 2009, Full Complement of Rolls, Chocks and Bearings, Spare Drive Motors.