



Nothing but **HEAVY DUTY.**[®]

BUILDING TOMORROW: SWAPPING GAS FOR BATTERY-POWER

**Pilot Program Brings Cordless Electric Tools and Equipment to a New York City Jobsite
in Pursuit of Net Zero Emissions**

Globally, the construction industry produces 38% of the world's total CO₂ emissions annually¹. Due to the vital importance that infrastructure plays across the globe, the industry continues to grow. In fact, some experts estimate that by 2030 the global volume of construction output will grow by 85% – a rate that translates to roughly \$15.5 trillion². This is great news for construction companies, but also underscores the importance of paying attention to the impact construction contributes to emission pollution.

As the move towards creating more sustainable jobsites gains momentum, industry organizations and governing bodies are working to take steps towards mandates and many companies are setting goals for a 50% reduction in their emissions by 2030.

According to the Environmental Protection Agency (EPA), equipment regularly used within the construction industry – such as equipment that uses traditional fossil fuels – can significantly harm public health and the environment. When you consider that just one (1) gallon of gasoline burned creates approximately 20 lbs of CO₂³ (the same as driving 22 miles in a gas-powered vehicle), it's clear that the construction industry will continue to be a large player in emission pollution whilst relying on fossil fuels to power equipment.

While corded power tools don't directly utilize gas, they are frequently used during the initial phases of construction when electrical power is unavailable. Consequently, they are powered by a gas generator, resulting in the same negative environmental effects as gas-powered equipment.



For more information visit www.milwaukeetool.com



Generators



Cut-Off Saw



Chainsaw



Concrete Vibrators



Plate Compactors



Vibratory Screeds



Walk-Behind Trowels



CONCERNS
Associated with Gas & Corded Tools

OPPORTUNITIES
Possible with Battery-Powered Tools



WORKER & COMMUNITY WELL BEING

- Reduction in Noise
- Lower Vibrations
- Improved Ergonomics
- Reduced Traffic (No Fuel Runs)



JOBSITE SAFETY

- Eliminated Cord Tripping Hazard
- Reduced Risk of Fire (Due to On-Site Fuel Storage)



ENVIRONMENTAL SUSTAINABILITY

- No CO₂ or Exhaust Emissions
- No Mixing Gas or Oil



COST, TIME & LABOR

- No Priming, Choking or Pull Starts
- No Fire Permits Required
- No Gas, Oil Supply and Maintenance

Milwaukee Tool partnered with a mid-sized New York concrete specialist company, employing over 200 field laborers and subcontractors, to conduct a six-month pilot program focused on creating a fully cordless jobsite.

The first step in the program was pure observation. The MILWAUKEE® Jobsite Solutions team got on-site with the contractors to observe the type of work being done, what tools were being used and how often those tools were in use throughout the day. The second step was to collaborate with the MILWAUKEE® Engineering team to build, install and track gas generator usage on the target jobsites. These two steps established the metrics for the success of the program.

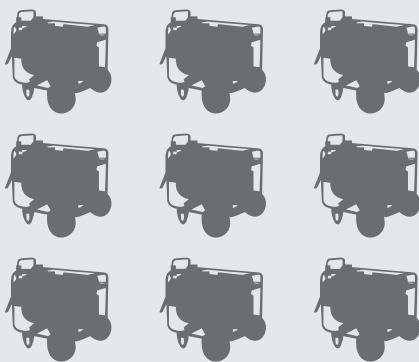
Could Milwaukee Tool’s cordless solutions meet performance, productivity and safety needs and reduce emissions from the jobsites?

Operating with roughly 90% corded power tools and all gas-powered small equipment, the company worked with MILWAUKEE® to replace their current tools and equipment with MILWAUKEE® cordless M18™ and MX FUEL™ solutions on active projects.

Through the Cordless Jobsite Pilot, the company sought solutions that could:

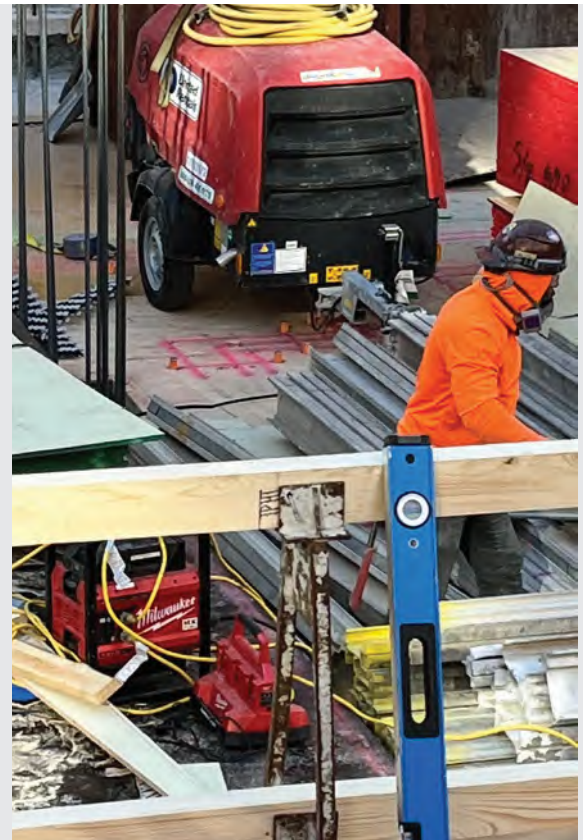
- Eliminate the risk of inhaling harmful fumes for both tool operators and bystanders
- Operate safely indoors and in enclosed spaces like trenches and vaults
- Function effectively on remote sites without access to electricity
- Minimize vibration and noise for the user
- Lower maintenance and fuel costs associated with gas-powered motors

Figures approximate the combined totals across three jobsites based on three generators per jobsite.



Data Trackers
Placed on Current Generators at Three (3) Jobsites

Takeaways
Usage Statistics
Run/Idle Time
Power Consumption





CORDLESS JOBSITE PILOT

Current Jobsite Generators & Milwaukee Tool Conversion

CURRENT JOBSITE GENERATORS

3 JOBSITES
9 GENERATORS 



14,500 HRS²

**PROJECTED
ANNUAL
RUNTIME**



\$35,000³

**PROJECTED
ANNUAL
FUEL COST**



**50,000 –
100,000 Lbs⁴**

**PROJECTED
ANNUAL
CO₂ EMISSIONS**

MILWAUKEE TOOL CONVERSIONS

ROLL-ON™ 7200W / 3600W
2.5kWh POWER SUPPLY



ROLL-ON™
7200W / 3600W
2.5kWh Power Supply



**IDLE
TIME
WASTED
ENERGY**

**WORK
DONE**



**NO MONEY
WASTED**

**WORK
DONE**



**Reduce
Particulates**



**Reduce Jobsite
CO₂ Emissions¹**

¹Source: Federal Reg. EPA; 40 CFR Part 98; e-CFR, Table C-1
Values above represent combustion emissions only (tank-to-wheel) and do not represent upstream emissions or well-to-wheel emissions

CURRENT JOBSITE EQUIPMENT



Generators



Cut-Off Saw



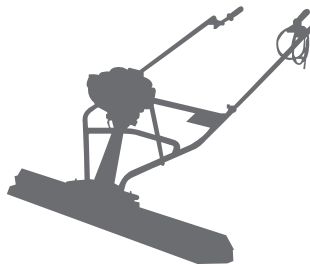
Chainsaw



Concrete Vibrators



Plate Compactors



Vibratory Screeds



Walk-Behind Trowels

MILWAUKEE® CONVERSIONS



ROLL-ON™
7200W / 3600W
2.5kWh Power Supply
3300R



MX FUEL™
14" Cut-Off Saw
w/ RAPIDSTOP™
MXF315-2XC



M18 FUEL™
16" Chainsaw
2727-21HD



MX FUEL™
Backpack
Concrete Vibrator
MXF371-2XC



MX FUEL™
Concrete Vibrator
MXF370-2XC



MX FUEL™
20" Plate Compactor
MXF220-2HD



MX FUEL™
Vibratory Screed
MXF381-2CP



MX FUEL™
36" Walk-Behind
Trowel
MXF336-3HD

ADDITIONAL MILWAUKEE® CONVERSIONS

EASIER TO USE



**NO TRIPPING
HAZARDS**



**NO CORDS
NO GENERATOR**



**M18 FUEL™
Deep Cut
Dual-Trigger
Band Saw**
2729S-22



**M18 FUEL™
1-3/4" SDS Max
Rotary Hammer
w/ ONE-KEY™**
2718-21HD



**M18 FUEL™
SUPER SAWZALL®
Reciprocating Saw**
2722-21HD



**M18 FUEL™
1/2" High Torque
Impact Wrench
w/ Friction Ring**
2967-22



**M18 FUEL™
Mud Mixer w/
180° Handle**
2810-22



**M18 FUEL™
7-1/4" Rear Handle
Circular Saw**
2830-21HD



**M18 FUEL™
2-Tool Combo Kit
w/ ONE-KEY™:
1/2" Hammer Drill/Driver
and 1/4" Hex Impact Driver**
3696-22



**M18 FUEL™
4-1/2" / 5"
Dual-Trigger
Braking Grinder**
2986-21



The run-time and longevity of the batteries has been especially impressive.

—Field Laborer participating in the Jobsite Pilot Study



**MX FUEL™ 14" Cut-Off Saw
w/ RAPIDSTOP™**
MXF315-2XC



**NO
EMISSIONS**

**Leading Gas
Competitors**



**TRADITIONAL
SMALL GAS ENGINE
EMISSIONS**

ELECTRIC WATER VALVE

Trigger Activated

LOAD LIGHT INDICATOR

Guides operator force

ON TOOL STORAGE

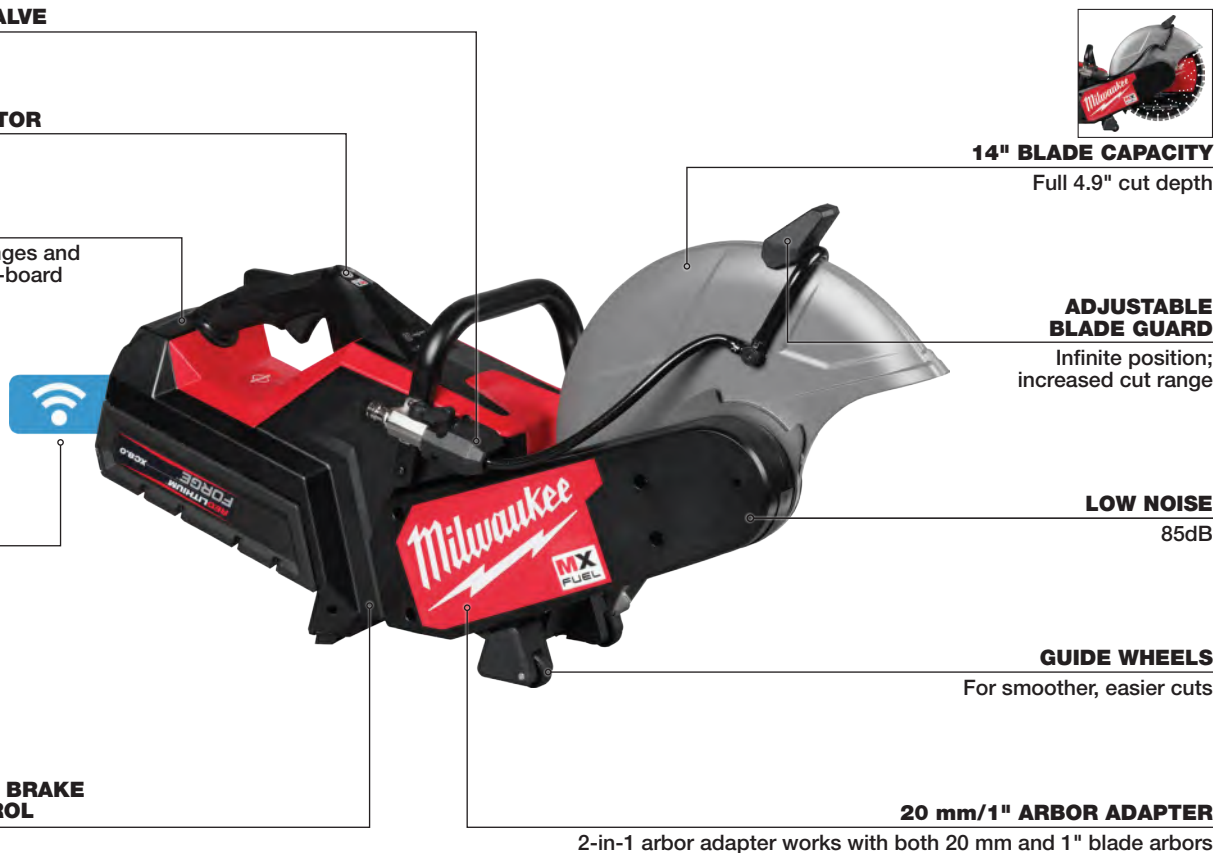
Scrunch for blade changes and allen wrench stored on-board

**ONE-KEY™
COMPATIBLE**

Track and manage

**RAPIDSTOP™ BLADE BRAKE
& KICKBACK CONTROL**

Enhanced control



14" BLADE CAPACITY

Full 4.9" cut depth

**ADJUSTABLE
BLADE GUARD**

Infinite position;
increased cut range

LOW NOISE

85dB

GUIDE WHEELS

For smoother, easier cuts

20 mm/1" ARBOR ADAPTER

2-in-1 arbor adapter works with both 20 mm and 1" blade arbors



MILWAUKEE® cordless tools make it possible to work without having to find a generator or jobsite power to run extension cords.

—Field Laborer participating in the Jobsite Pilot Study



MX FUEL™
20" Plate Compactor
MXF220-2HD



NO
EMISSIONS

Leading Gas
Competitors



TRADITIONAL
SMALL GAS ENGINE
EMISSIONS



FOLDABLE HANDLES
Easier transportation and storage

LIFT POINT
For hooks and straps when transporting

ONE-KEY™ COMPATIBLE
Track and manage



MULTI-DIRECTION
CAPABILITY
Forward and reverse
for easier operation

PUSH BUTTON START
No choking, priming or pulling

SPEED CONTROL
Fast/Slow

LIFT HANDLES
Quick and easy multi-person lifts



The MX FUEL™ product line has improved our setup times and reduced tripping hazards compared to using previous corded solutions. The durability of the tools in the elements is another impactful quality we have already noticed.

—Superintendent participating in the Jobsite Pilot Study

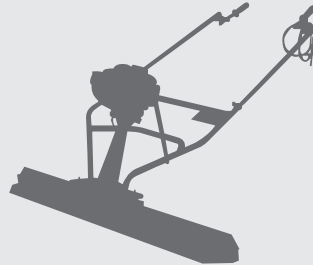


**MX FUEL™
Vibratory Screed
MXF381-2CP**



**NO
EMISSIONS**

**Leading Gas
Competitors**



**TRADITIONAL
SMALL GAS ENGINE
EMISSIONS**

VARIABLE SPEED TRIGGER
Optimal control for wet and stiff concrete

CARRY HANDLE
Ergonomic handle for transporting and positioning

PUSH BUTTON START
Eliminates the repetitive motions of a pull start

ON-BOARD TOOL STORAGE
9/16" Wrench for bar change stored on-board

ADJUSTABLE HANDLEBAR
Easily adjust handlebar height for user comfort

LOW NOISE
83dB

CLAMP ON BAR DESIGN
Quick attachment with no holes or hardware through bars, compatible with both MILWAUKEE® and MBW bars