



48V DRIVE SYSTEM · PATENT PENDING

DROP-IN 48V POWER. FOR COMPACT MACHINES.

A geometry-driven battery power platform for compact professional machines.

48 V

SYSTEM VOLTAGE

1.5 kWh

LFP BATTERY PACK

1.5 kW

DRIVE MOTOR

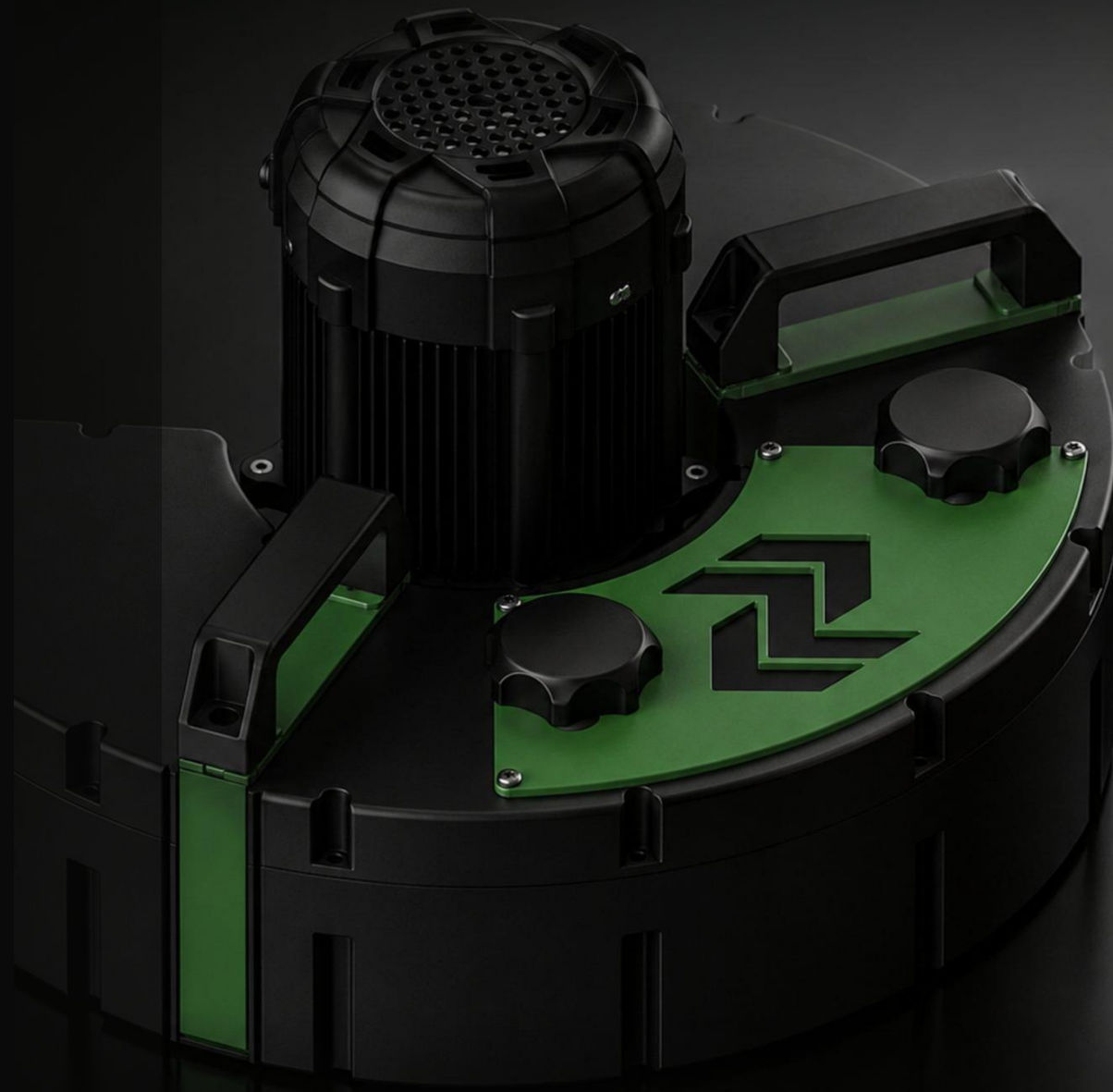
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WORKING PROTOTYPES

PACK ONLY · DRIVE SET · FULL SYSTEM ON ONE CAN BUS

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FOR MACHINE BUILDERS



Render of the preliminary design

BATTERY TODAY. AUTONOMY NEXT.

Compact professional machines are moving to batteries and, step by step, towards assisted and autonomous operation. Both put more on board: more energy, more electronics, more sensors. In a compact machine, three things then decide what fits.

1 INSTALLATION SPACE

Energy competes for room with tanks, dust extraction, drive trains and electronics, and in autonomous machines with sensors and computing. LFP, the chemistry we chose for its thermal stability, needs more volume for the same energy.

2 BALANCE

Where the battery mass sits decides stability, handling and traction. A pack placed where there happens to be room rarely sits where the machine needs its weight.

3 WORKING PRESSURE

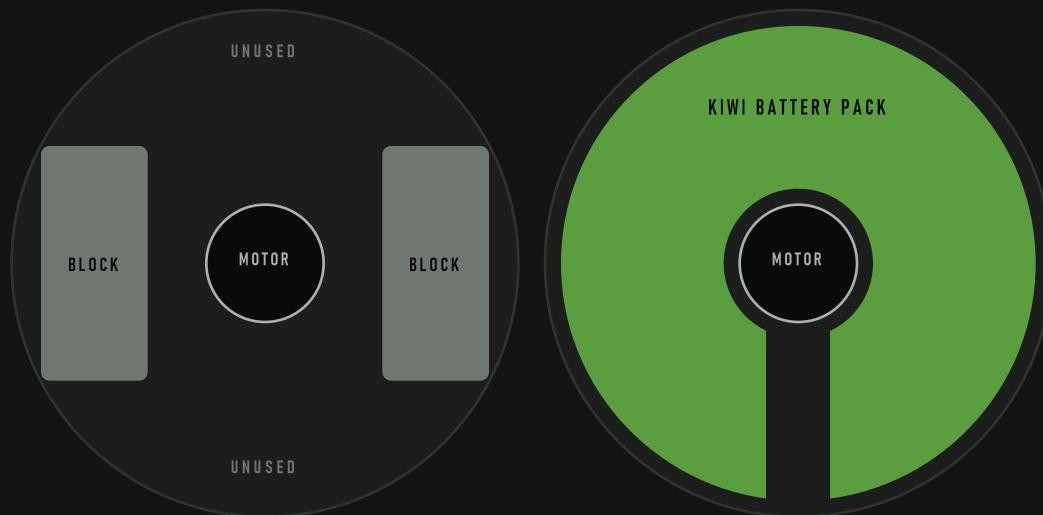
Discs, brushes, pads and blades work through pressure on the tool. Ballast, actuators or a heavier frame provide it, and each of them costs space, energy or both.

THE QUESTION IS NO LONGER WHETHER THE BATTERY COMES, BUT HOW IT FITS

A pack shaped for the machine answers all three at once: it uses space the machine was not using, puts its mass where the machine needs it, and turns battery weight into pressure on the tool.

POWER THAT FITS THE MACHINE.

TOP VIEW OF A ROUND WORKING HEAD · MOTOR IN THE CENTRE



BLOCK PACKS BESIDE THE MOTOR: part of the head stays empty, the mass sits off-centre or split, and the packs need their own bay in the machine.

KIWI BATTERY PACK, SHAPED AROUND THE MOTOR: the space around the motor is used, the mass sits centred on the tool, and the pack lifts off without opening the frame.

The Kiwi Battery Pack is shaped for the machine: around the motor, on the working head, outside the frame. It turns space the machine was not using into energy, and battery weight into balance and working pressure.

SPACE

Shaped around the drive motor, the pack uses the space that a block leaves empty. The chassis keeps its room for tanks, extraction, electronics and sensors.

BALANCE

The mass sits centred above the tool, low and symmetrical. One or two blocks beside the motor put it off-centre or split it.

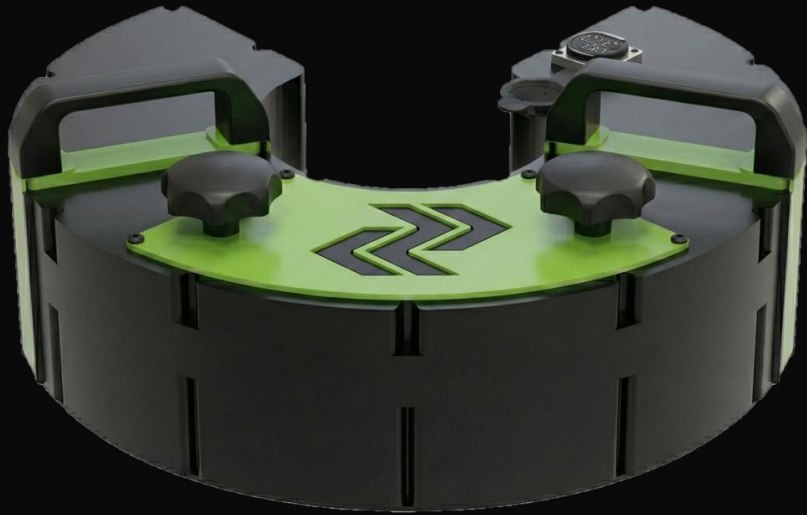
WORKING PRESSURE

The battery's weight adds pressure on the tool, where the machine needs it, instead of being dead weight elsewhere in the frame.

ACCESS

The pack sits on the working head and lifts off without opening the machine, for a swap or for service.

ONE SYSTEM, ENGINEERED TOGETHER.



Kiwi Battery Pack, render of the preliminary design. Patent pending.

The machine builder designs around one module. Pack, motor and controller are engineered together as one system, from one partner.

1 KIWI BATTERY PACK

A 48 V LFP pack of 1.5 kWh, shaped around the drive motor: optimal use of installation space, battery weight as working pressure, balanced weight distribution. Fixed, or swappable on site.

2 MOTOR AND CONTROLLER

1.5 kW PMSM motors at 1500 or 3000 rpm, with the same flange and shaft: one machine design takes either motor. A sine-wave controller matched to both versions.

3 ONE CAN BUS

Pack, motor and controller are designed to share one CAN bus with charge and power data: a basis for machine data and, in future, assisted and autonomous functions.

4 ONE PARTNER

We test together, develop together and then supply the platform for your series, with our engineering support during integration. Your machine design and your brand stay yours.

PACK ONLY · DRIVE SET · FULL SYSTEM · HYBRID MODULE OPTIONAL, IN DEVELOPMENT

SYSTEM AND SPECS, AT A GLANCE.

KIWI BATTERY PACK

PATENT PENDING

VOLTAGE	48 V
CAPACITY	1.5 kWh
CHEMISTRY	LFP
SHAPE	around the drive motor
USE	fixed, or swappable on site
COMMUNICATION	CAN, linked to the controller
NEXT GENERATION	new BMS, in development

1.5 kW DRIVE MOTOR

TWO SPEED VERSIONS

RATED POWER	1.5 kW
PEAK POWER	2.4 kW (shaft)
SYSTEM VOLTAGE	48 V
PEAK EFFICIENCY	above 90 %
TYPE	PMSM with Hall sensors
PROTECTION	IP65 (excl. connector)
VERSIONS	1500 rpm and 3000 rpm

CONTROLLER

MATCHED TO THE MOTOR

CONTROL	sine-wave FOC
VOLTAGE	48 V (40 to 60 V)
COMMUNICATION	CAN, linked to the pack BMS
SPEED CONTROL	2 or 3 speed settings
SIZE AND WEIGHT	to be confirmed on samples

TWO SPEED VERSIONS, ONE INTERFACE

VERSION	RATED SPEED	RATED TORQUE	PEAK TORQUE
1500 rpm	1500 rpm	9.8 Nm	32 Nm
3000 rpm	3160 rpm	4.5 Nm	31 Nm

Same flange and shaft: one machine design takes either motor.

HYBRID MODULE AND DOCUMENTATION

Optional hybrid module, shown on a prototype and now in development for series use: the same machine can also run on mains power.

Drawings and 3D models are available on request. We can also arrange a working pack demonstration, at our facilities or supervised on location at your facilities.

ONE PACK, SHAPED FOR THE MACHINE.



Kiwi Battery Packs with charger, on site

MOUNTING

Around the motor, on the working head, outside the frame. The pack lifts off without opening the machine.

CHEMISTRY

Lithium iron phosphate (LFP), chosen for its thermal stability. LFP needs more volume for the same energy; the shape around the motor makes that volume available.

VOLTAGE AND CAPACITY

48 V and 1.5 kWh. Pack, motor and controller work in one 48 V system.

FIXED OR SWAPPABLE

Bolted in, or swappable on site, so work continues with a second, charged pack.

CAN AND BMS

State of charge, temperature, power limits and diagnostics on the bus, as one dataset for the machine. The next generation, with a new BMS, is in development.

CERTIFICATION

Pack-level certification, the UN 38.3 transport test and CE, is planned for 2027.

YOUR BRAND

Your machines stay under your brand. Our technology is there to strengthen your brand, not to compete with it.

PATENT PENDING

The European and US phases are in preparation.

1500 RPM OR 3000 RPM. SAME FLANGE, SAME SHAFT.

1500 RPM VERSION

RATED SPEED	1500 rpm
RATED TORQUE	9.8 Nm
PEAK TORQUE	32 Nm
RATED / PEAK POWER	1.5 kW / 2.4 kW (shaft)
TYPE	PMSM with Hall sensors
PROTECTION	IP65 (excl. connector)

3000 RPM VERSION

RATED SPEED	3160 rpm
RATED TORQUE	4.5 Nm
PEAK TORQUE	31 Nm
RATED / PEAK POWER	1.5 kW / 2.4 kW (shaft)
TYPE	PMSM with Hall sensors
PROTECTION	IP65 (excl. connector)

CONTROLLER

CONTROL	sine-wave FOC
VOLTAGE	48 V (40 to 60 V)
COMMUNICATION	CAN, linked to the pack BMS
SPEED CONTROL	2 or 3 speed settings
FOR	both motor versions
SIZE AND WEIGHT	to be confirmed on samples

MOTOR ON ITS OWN, OR AS A DRIVE SET

Both versions share the same flange and shaft, so one machine design takes either motor. The motor comes as part of the platform, as a drive set with its matched controller, or on its own, also for machines that keep their existing battery. Peak efficiency above 90 %. Drawings and 3D models are available on request.

THE 1500 RPM ROUTE: NO CUSTOM GEAR RATIO

With a 1:10 reduction, the 1500 rpm version would give about 150 rpm at the disc. The shaft is a standard machine element; the flange has its own pattern, so fitting it to an existing gearbox takes an adapter plate. The new motor goes onto our prototypes as the first sample sets arrive.

BUILT FOR MACHINES THAT WORK THROUGH THEIR OWN WEIGHT.

PROVEN ON OUR PROTOTYPES

TWO 48 V PROTOTYPES

A planetary sander/grinder and a single-disc machine: parquet sanding, stone and concrete grinding, scrubbing.

THE PACK ON THE MACHINE

Built and run on the platform. On the working head, outside the frame, its weight adds to the pressure on the tool.

WHERE WE EXPECT IT TO FIT

SCRUBBER-DRYERS

Room for larger solution and recovery tanks in the same footprint.

POWER TROWELS

Cordless and emission-free for indoor floor work, where machines need power at the tool.

FLOOR SCRAPERS

Where the blade needs downforce, battery weight can take over part of the ballast.

FURTHER AHEAD

COMPACT AUTONOMOUS MACHINES

Design direction: the chassis stays free for sensors and electronics, with swappable energy and one CAN dataset.

BEYOND THE FLOOR

Compact machines in other sectors that work through their own weight and need their chassis for more than a battery.



One of our 48 V prototypes

WHY WE STARTED IN FLOOR MACHINES

We developed the platform in floor machines because they combine high continuous power, high downforce on the tool and very little space. Any compact machine asks the same three questions: where the energy fits, where its mass sits and how much pressure reaches the tool. Tell us the machine, its duty cycle and the space available, and we will tell you whether the platform fits.

ONE PLATFORM ACROSS A MACHINE RANGE · LET'S PUT YOUR MACHINES ON 48V

TESTED ON REAL FLOORS, UNDER REAL LOAD.



One of our two 48 V prototypes, on herringbone parquet



Our second 48 V prototype, a single-disc machine, scrubbing tiles



Single-disc prototype: brush and light ring on wet tiles

TWO WORKING PROTOTYPES

A planetary sander/grinder and a single-disc machine, both on our 48 V platform.

REAL WORK

Parquet sanding with grit 24, stone and concrete grinding, and scrubbing, on battery and in hybrid mode (also on mains).

THE PACK RUNS

The Kiwi Battery Pack has been built and operated on the platform. The next generation, with a new BMS, is in development.

ON VIDEO

[Watch the prototype video.](#) A live demonstration can be arranged at our facilities or on location at your facilities.

NEXT

The new 1.5 kW motor and matching controller go onto the prototypes as the first sample sets arrive.

FROM CONCEPT TO SERIAL PRODUCTION.

1 CONCEPT

We start from your goal: which machine, what it must deliver, and whether the platform fits.

2 ENGINEERING & DESIGN

Mechanical integration, drivetrain layout, CAN interface. Under a joint development agreement the pack can be adapted to your platform.

3 PROTOTYPING

Motor and controller sample sets for your build, and a working pack demonstration at our facilities or supervised on location at your facilities.

4 TESTING & TUNING

We help get the system running on your prototype and tune it together until it performs.

5 PRODUCTION & SUPPLY

Series supply of packs, motors and controllers, with the technical documentation your certification process needs.

WHY KIWI

We build on this platform ourselves: two working prototypes, a planetary sander/grinder and a single-disc machine. That integration experience goes straight into your project. Our founder was a flooring contractor himself: we look at machines with the eyes of the people who use them every day.



48 V prototype on parquet

EVERY PARTNER IS DIFFERENT. WE KEEP THE FORM OPEN.

PLATFORM SUPPLY

Battery pack, motor and controller for your own machines, with our engineering support during integration.

JOINT DEVELOPMENT

We develop new machines together, you produce and sell them.

LICENCE

Use of our patented technologies (Pressure Point Sanding System, EP 4114612 B1; Block-in Drive, US 11,717,929 B2) and engineered designs in your range.

YOUR BRAND

Your machines stay under your brand. Our technology is there to strengthen your brand, not to compete with it.

WHAT WE LOOK FOR IN A PARTNER

Experience in building and producing machines, and the capacity to scale. A network of dealers and customers, at home and abroad. Knowledge of markets and applications that complements ours. The ambition to bring new machines to market within an agreed timeline.

Whatever the form, we work openly and reliably. Terms are agreed per programme.

ONE POSSIBLE ROUTE. EACH STEP CAN ALSO STAND ON ITS OWN.

1 TEST

Motor, controller and Kiwi Battery Pack in practice, at our facilities or on one of your machines at your facilities.

2 DEVELOP TOGETHER

A machine on the platform, with our engineering support during integration. Scope, success criteria and timeline are agreed together.

3 SERIES AND SALES

You build and sell the machine; we supply the platform: the pack, the drive set or the full system.

WHAT WE NEED FROM YOU

THE MACHINE

Type, working width, head weight, duty cycle and the runtime your customers expect per shift.

THE ENVELOPE

Available space around the motor, mounting orientation, existing reducer ratio and target disc speed.

THE PATH

Your certification route, target launch date and the volumes a first series would carry.

WHAT KIWI PROVIDES, WHAT STAYS WITH YOU.

KIWI PROVIDES

PACK-LEVEL CERTIFICATION

The UN 38.3 transport test and CE for the Kiwi Battery Pack, planned for 2027.

DOCUMENTATION

Test reports and the integration documentation for your machine file.

ON REQUEST

Drawings, 3D models and the technical details of the platform, available on request.

STAYS WITH YOU

MACHINE CONFORMITY

Conformity of the complete machine. We supply the inputs and support the integration questions.

MACHINE DESIGN AND BRAND

Your machine design and your brand stay yours.

SALES AND SERVICE

Through your own dealer and service network.

SERIES SUPPLY

Series supply of the pack, the drive set or the full system for partner machines, with our engineering support. Sample terms, engineering support and series pricing are agreed per programme.

BUILT BY PEOPLE WHO WORK THE FLOOR.

Kiwi started on the floor, not on a drawing board. Our founder was a flooring contractor himself, specialised in marble and parquet renovation and in floor cleaning, before he started building machines and products for floors. When batteries made cordless professional machines possible, we found no battery that fitted what a compact floor machine needs. So we shaped one that does.

VISION

Most compact professional machines will run on batteries and carry far more technology than today: cordless and emission-free, moving step by step towards flexible and, eventually, autonomous operation.

THE COMPANY

Kiwi Drive Systems is a trade name of Kiwi Floor Solutions B.V., Dordrecht, the Netherlands. The battery and drive platform is at an early stage: working prototypes, patent pending, first partner evaluations ahead.



EDWARD LAGERWAARD

FOUNDER & MANAGING DIRECTOR

Former flooring contractor in marble and parquet renovation and floor cleaning. Designed the Kiwi machines, the Block-in Drive and the Kiwi Battery Pack; named inventor on the Kiwi patents and applications.



EDWIN DE KREIJL

SENIOR BATTERY SYSTEMS ENGINEER

Senior automotive battery systems experience; BMS, system integration and CAN-based communication.

ENGINEERING, ADVISORY AND INDUSTRIAL SUPPORT

Devoteq B.V. (engineering support, early-stage investor), Bert Lammers (technical advisor, early-stage investor) and Heboma Machines (prototyping and industrial support).



NEXT STEP

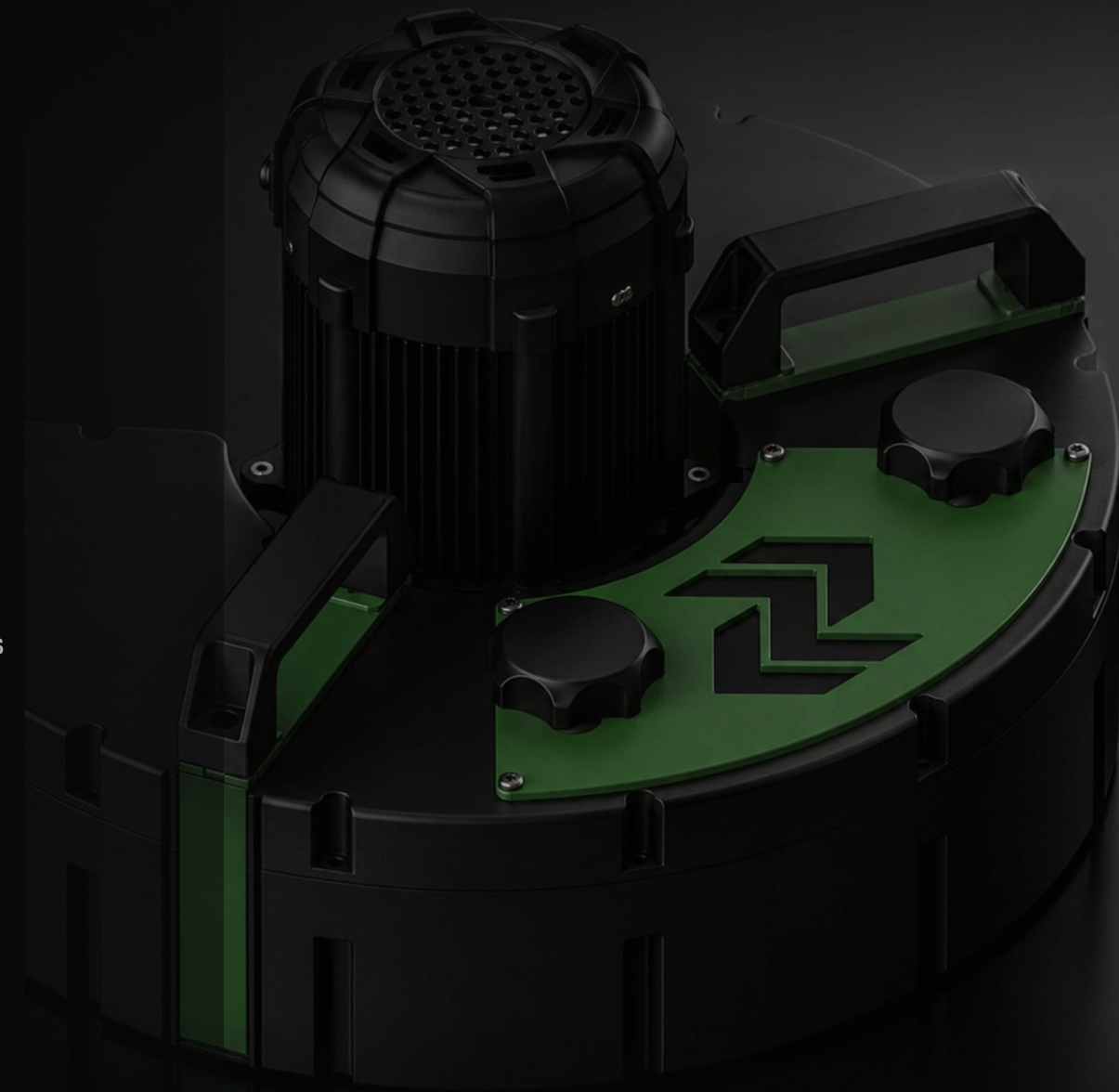
LET'S PUT YOUR MACHINES ON 48V.

We would be glad to get to know each other better in a short video call. A technical exchange and a demonstration under load, at our facilities or on location at your facilities, can be arranged whenever it suits you. [Watch the prototype video.](#)

CONTACT

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DRAWINGS AND 3D MODELS ON REQUEST



Render of the preliminary design