

B&D INDUSTRIAL

Irrigation Single
Pumps & Pivots



SERVING INDUSTRY SINCE 1947

A photograph showing a technician in a grey long-sleeved shirt and a grey baseball cap working on an open industrial control panel. The panel contains various electrical components, including a large black fan on the left, a white ABB control unit in the center, and a blue terminal block at the bottom. Wires are connected to the components. The technician is kneeling and looking at the panel.

INDUSTRY DESIGNS

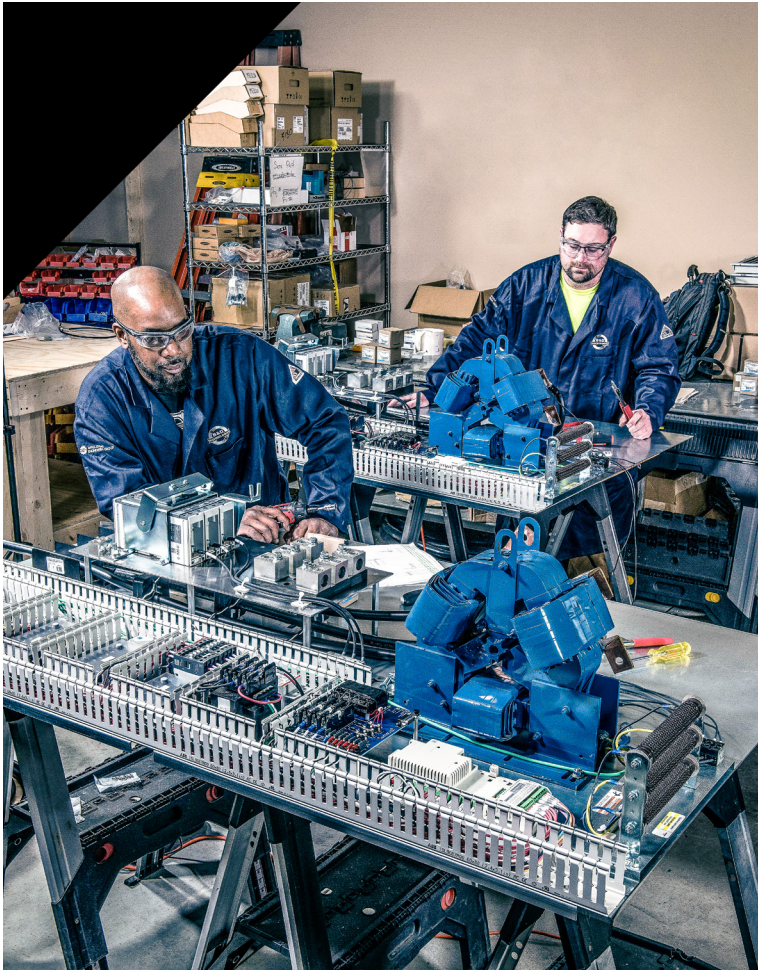
CUSTOM CREATIONS

THE BEST ACCESSORIES

The needs of specific industries have guided B&D to produce some of the boldest and most useful designs in the US.

ABOUT US

THE DESIGN BUILD LABORATORY

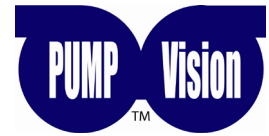


"Laboratory:
A place providing
opportunity for
experimentation,
observation, or prac-
tice in a field of study."
Webster Dictionary

B&D spends an average of \$2M per year on research and development (R&D) specific to variable-frequency drives (VFDs), industrial controls, mechanical transmission, and cutting-edge topics in Industry 4.0 and machine learning (ML).

We started sixteen years ago with a folding table and a few engineers testing the programming of a VFD located on the floor. The escalation started as customers began asking us to test various ideas for system optimization and reliability improvements. By 2013, this led to the creation of a fully functional laboratory in Norcross. Before that time, building our designs had been outsourced to several firms around Georgia and Florida. After overcoming many challenges associated with schedules and quality, in 2016, we opted to bring the building and quality processes into the confines of the lab where our most seasoned design engineers were located. Today, in addition to R&D testing, we build over \$3M in custom AC and DC drive systems for several industries—paper, plastics, mining, textiles, and irrigation, to name just a few within the breadth of our knowledge.

#PUMP VISION™



The UNIVERSAL PUMP CONTROLLER

B&D and California Motor Controls are proud to offer the most accessible pre-engineered pump controller on the market that has level, pressure, and well specific application controls in one unit.



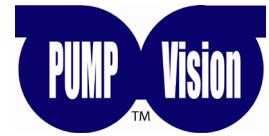
[Link for complete data](#)

#1 Level Control Mode:

The PV600 is more than just a level controller. It can operate just about any lift station application known. The PV600 can be configured to work with almost any level sensor, including 4-20 mA submersible transducers, ultrasonic, radar, standard float switches, and even ten segment probes. For redundancy, a total of two transducers and two backup float switches can be connected.

PV600 with Ethernet added to any B&D Design - \$2,500

#PUMP VISION™



#2 Pressure Booster Mode:

The Pressure Booster controller is designed to provide a constant pressure with variable flow conditions. By incorporating all of the latest energy-saving technologies such as variable speed drives, sensorless no flow shut-down, and seamless sequencing of multiple pumps (up to four), the PV600 provides a reliable performance under extreme swings in operating conditions.

#3 Well Mode:

The PV600 brings all of the operation and protection capabilities typically reserved for municipal pump stations to the agricultural and domestic well market that has historically had "bare-bones" controls. The Well Pump mode operates a single pump. It provides complete station management with the ability to monitor and control all of the motor functions, filter status, and provide system alarm and RTU functions for the agricultural and domestic well market.

**Do not see what you are looking for in the catalog?
B&D can engineer, design, and build any type of single, duplex, triplex, and quadplex drive control system for pumping and irrigation solutions.**

#B&D SINGLE PUMPS & PIVOTS

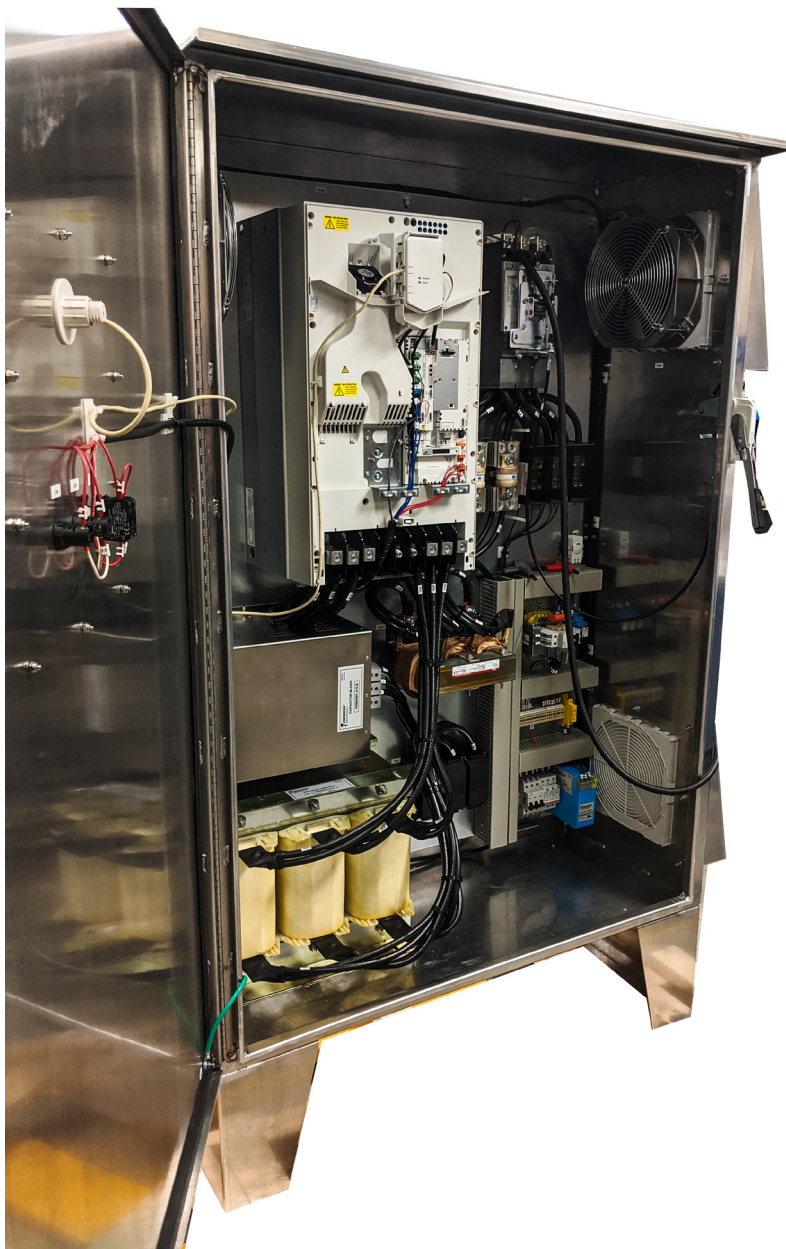
N3R Enclosed 50 to 350HP at 460VAC three-phase

We went back to first-principle design and started from the ground-up taking into account every detail with three specific designs:

#League One - Steel N3R with basic features

#Championship - Aluminium N3R with advanced features

#Premier - Championship design with an added Sine-Filter (see why)



Powered by the ABB ACQ580 Aqua Drive

The Base Drive for our Irrigation Designs

Built-in pump functionality:

- Intelligent multi-pump control
- Sensor-less flow calculation
- Level control
- Soft pipe fill
- Quick ramps
- Pump cleaning
- Dry pump protection
- Motor preheat



More on the ACQ580

#B&D SINGLE PUMPS & PIVOTS



The Designs

#League One

ABB - ACQ580 Aqua Drive

League One Features:

- N3R Steel Enclosures
- 50 to 350HP at 460VAC 3P
- Flange Handle Disconnect/Breaker
- Main Drive fuses and SPD
- Prepped for ungrounded and corner grounded power
- Oversized Control Transformer
- Dual Shrouded Filter Fan(s)
- HOA and Pilots
- External Keypad with opaque N4X cover
- Analog outputs for Speed and Current
- Relays for Ready, Run, and Fault
- Galvanized Backplate
- All bonded and grounded enclosure points
- Two-year warranty
- UL508A

#Championship Design

ABB - ACQ580 Aqua Drive

Upgrades to League One Design:

- Corrosion resistant Aluminum Enclosures
- Input Line Reactor
- Output Reactor
- Parallel EMI Filter
- Pressure sensor and dual PID loops
- Analog input filter
- Bypass on 125HP and below
- 3 Auxiliary 30A 3 Pole UL489 MCBs
- Up to a six-year warranty

Built to Order with 4 week average lead-time



#B&D SINGLE PUMPS & PIVOTS

LEAGUE ONE

Catalog Number	HP	Current (A)	Dims (HWD)	Cost
ACQ580-01-065A-4+N3RL1	50	65	79x32x24	\$11,515.68
ACQ580-01-078A-4+N3RL1	60	78	79x32x24	\$11,996.00
ACQ580-01-096A-4+N3RL1	75	96	79x32x24	\$12,662.77
ACQ580-01-124A-4+N3RL1	100	124	79x32x24	\$13,688.77
ACQ580-01-156A-4+N3RL1	125	156	79x40x24	\$14,459.92
ACQ580-01-180A-4+N3RL1	150	180	79x40x24	\$15,722.53
ACQ580-01-240A-4+N3RL1	175	240	79x40x24	\$16,458.72
ACQ580-01-260A-4+N3RL1	200	260	79x40x24	\$16,875.71
ACQ580-01-302A-4+N3RL1	250	302	79x40x24	\$19,704.43
ACQ580-01-361A-4+N3RL1	300	361	79x40x24	\$21,541.60
ACQ580-01-414A-4+N3RL1	350	414	79x40x24	\$23,659.97

CHAMPIONSHIP

Catalog Number	HP	Current (A)	Dims (HWD)	Cost
ACQ580-01-065A-4+N3RC	50	65	79x32x24	\$13,782.35
ACQ580-01-078A-4+N3RC	60	78	79x32x24	\$14,262.67
ACQ580-01-096A-4+N3RC	75	96	79x32x24	\$14,929.44
ACQ580-01-124A-4+N3RC	100	124	79x32x24	\$15,955.44
ACQ580-01-156A-4+N3RC	125	156	79x40x24	\$17,193.25
ACQ580-01-180A-4+N3RC	150	180	79x40x24	\$18,455.87
ACQ580-01-240A-4+N3RC	175	240	79x40x24	\$19,192.05
ACQ580-01-260A-4+N3RC	200	260	79x40x24	\$19,609.04
ACQ580-01-302A-4+N3RC	250	302	79x40x24	\$22,437.76
ACQ580-01-361A-4+N3RC	300	361	79x40x24	\$24,274.93
ACQ580-01-414A-4+N3RC	350	414	79x40x24	\$26,393.31

ABB

**VALUE
PROVIDER**



#B&D SINGLE PUMPS & PIVOTS

#Premier Design

ABB -ACQ580 Aqua Drive

Upgrades to Championship Design:

- Output Sine Wave Filter



More Information

ONE CHANGE WITH HUGE IMPACT



Benefits of a Sine Wave Filter for Irrigation Designs:

- Eliminates the problem of motor/cable insulation failures and use of non-drive rated cables
- Motors can be up to 8,000 ft away from the drive
- Applications can use older non-drive rated motors
- Reduces heating and audible noise problems
- Reduces electromagnetic interference (EMI) affecting GPS and instrumentation

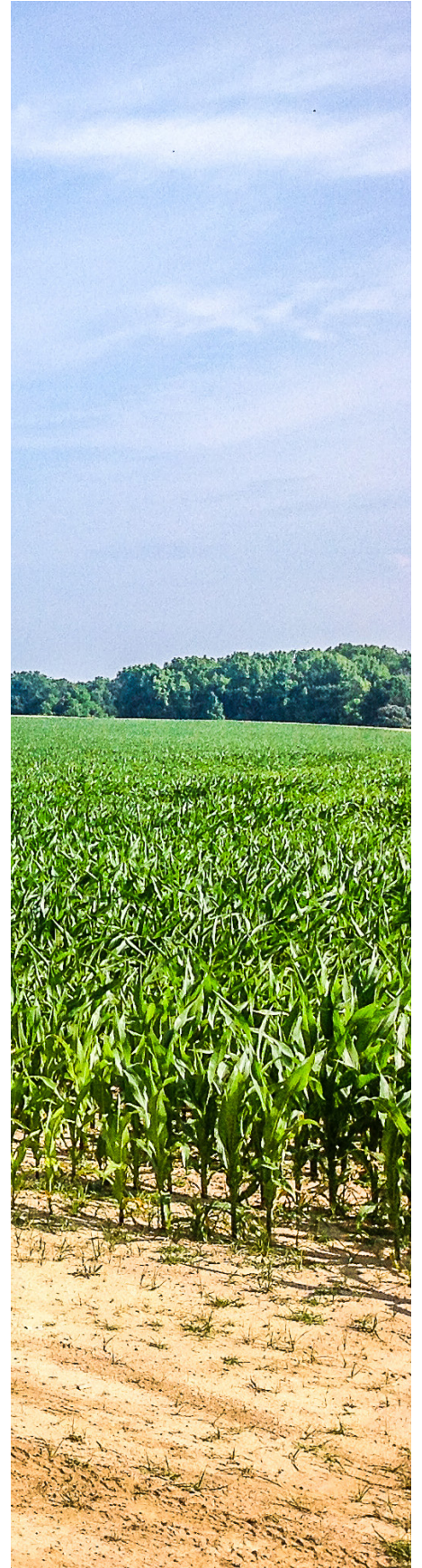
PREMIER

Catalog Number	HP	Current (A)	Dims (HWD)	Cost
ACQ580-01-065A-4+N3RP	50	65	79x32x24	\$14,825.20
ACQ580-01-078A-4+N3RP	60	78	79x32x24	\$15,516.24
ACQ580-01-096A-4+N3RP	75	96	79x32x24	\$16,657.84
ACQ580-01-124A-4+N3RP	100	124	79x32x24	\$17,893.92
ACQ580-01-156A-4+N3RP	125	156	79x40x24	\$19,540.45
ACQ580-01-180A-4+N3RP	150	180	79x40x24	\$21,381.87
ACQ580-01-240A-4+N3RP	175	240	79x40x24	\$22,118.05
ACQ580-01-260A-4+N3RP	200	260	79x40x24	\$23,336.13
ACQ580-01-302A-4+N3RP	250	302	79x40x24	\$26,990.48
ACQ580-01-361A-4+N3RP	300	361	79x40x24	\$27,629.38
ACQ580-01-414A-4+N3RP	350	414	79x40x24	\$29,992.48

#B&D SINGLE PUMPS & PIVOTS



**SEE OUR REMOTE SERVICE
OPTION TOWARDS THE END OF
THE CATALOG**



#V1 - VERTICAL HOLLOW SHAFT MOTORS

PREMIUM EFFICIENCY VHS MOTORS

Three-Phase, 215TP—5008P Frame

Open Weather-Protected Machine Type 1—WP1

Inverter Rated (10:1 VT)

High / Extra High Thrust



Key Features:

- 10 HP—500 HP in Stock
- 1.15 Service Factor @ 60 Hertz
- Oversized Angular Contact Bearing and Ball Bearing
- High Thrust (10 HP—250 HP)
- Extra High Thrust (100 HP—500 HP)
- Class F Insulation System; Class B Rise at Full Load;
- Class H Vacuum Pressure Impregnation (VPI) Windings
- 40°C Ambient Continuous Duty
- Stainless Steel Nameplate and Zinc Plate Hardware
- NEMA Design B Performance
- Enclosure: WP1
- Non-Reverse Ratchet (Ball Type)
- Oil Bath with Large Reservoir (40 HP—500 HP)
- Cast Iron / Plate Steel Frame Construction
- Light Weight Hood for Easy Access
- Space Heaters
- Resistance Temperature Detector (RTD) (300 HP—500 HP)
- Thermal Protected
- Corrosion Resistant Epoxy Paint
- Lifting Provisions
- Two (2) Year Warrant (Extended Warranty Available)



Coupling Included
V1 - 10:1 Speed Range

APPLICATIONS:

Designed primarily for deep well turbine pump applications. The coupling is equipped with a non-reverse ratchet, which prevents motor rotation from backspin at shut-down. These motors are built to NEMA standards and have special bearing arrangements to carry heavy thrust loads.

#V1 - VERTICAL HOLLOW SHAFT MOTORS

Catalog Number	Description	Cost
V1-50D4-W32616A	50 HP, 1800 RPM, 326TP Frame, 230/460V, includes 1.250 Coupling	\$2,972.43
V1-50D4-W32616B	50 HP, 1800 RPM, 326TP Frame, 230/460V, includes 1.188 Coupling	\$2,972.43
V1-50S4-W32616A	50 HP, 1800 RPM, 326TP Frame, 460V, includes 1.250 Coupling	\$2,972.43
V1-60D4-W36416A	60 HP, 1800 RPM, 364TP Frame, 230/460V, includes 1.250 Coupling	\$3,141.74
V1-60D4-W36416B	60 HP, 1800 RPM, 364TP Frame, 230/460V, includes 1.188 Coupling	\$3,141.74
V1-60S4-W36416A	60 HP, 1800 RPM, 364TP Frame, 460V, includes 1.250 Coupling	\$3,141.74
V1-60S4-W36416B	60 HP, 1800 RPM, 364TP Frame, 460V, includes 1.188 Coupling	\$3,141.74
V1-75D4-W36516A	75 HP, 1800 RPM, 365TP Frame, 230/460V, includes 1.250 Coupling	\$4,044.76
V1-75D4-W36516B	75 HP, 1800 RPM, 365TP Frame, 230/460V, includes 1.188 Coupling	\$4,044.76
V1-75S4-W36516A	75 HP, 1800 RPM, 365TP Frame, 460V, includes 1.250 Coupling	\$4,044.76
V1-75S4-W36516B	75 HP, 1800 RPM, 365TP Frame, 460V, includes 1.188 Coupling	\$4,044.76
V1-100D4-W40416A	100 HP, 1800 RPM, 404TP Frame, 230/460V, includes 1.500 Coupling	\$5,079.46
V1-100D4-W40416B	100 HP, 1800 RPM, 404TP Frame, 230/460V, includes 1.188 Coupling	\$5,079.46
V1-100S4-W40416A	100 HP, 1800 RPM, 404TP Frame, 460V, includes 1.500 Coupling	\$5,079.46
V1-100S4-W40416A-EHT	100 HP, 1800 RPM, 404TP Frame, 460V, Extra High Thrust, includes 1.500 Coupling	\$5,669.87
V1-125S4-W40516A	125 HP, 1800 RPM, 405TP Frame, 460V, includes 1.500 Coupling	\$5,455.72
V1-125S4-W40516A-EHT	125 HP, 1800 RPM, 405TP Frame, 460V, Extra High Thrust, includes 1.500 Coupling	\$6,020.10
V1-150S4-W44416A	150 HP, 1800 RPM, 444TP Frame, 460V, includes 1.688 Coupling	\$6,546.86
V1-150S4-W44416A-EHT	150 HP, 1800 RPM, 444TP Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$7,205.31
V1-200S4-W44516A	200 HP, 1800 RPM, 445TP Frame, 460V, includes 1.688 Coupling	\$9,444.04
V1-200S4-W44516A-EHT	200 HP, 1800 RPM, 445TP Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$10,046.05
V1-250S4-W44516A	250 HP, 1800 RPM, 445TP Frame, 460V, includes 1.938 Coupling	\$10,496.36
V1-250S4-W44516A-EHT	250 HP, 1800 RPM, 445TP Frame, 460V, Extra High Thrust, includes 1.938 Coupling	\$11,237.87
V1-300S4-W500624A-EHT	300 HP, 1800 RPM, 5006P Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$15,061.71
V1-350S4-W500624A-EHT	350 HP, 1800 RPM, 5006P Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$16,438.32



#V2 - VERTICAL HOLLOW SHAFT MOTORS

PREMIUM EFFICIENCY VHS MOTORS

Three-Phase, 215TP—5008P Frame

Open Weather-Protected Machine Type 1—WP1

Inverter Rated (20:1 VT)

High / Extra High Thrust



Key Features:

- 10 HP—500 HP in Stock
- 1.15 Service Factor @ 60 Hertz
- Oversized Angular Contact Bearing and Ball Bearing
- High Thrust (10 HP—250 HP)
- Extra High Thrust (100 HP—500 HP)
- Class F Insulation System; Class B Rise at Full Load;
- Class H Vacuum Pressure Impregnation (VPI) Windings
- 40°C Ambient Continuous Duty
- Stainless Steel Nameplate and Zinc Plate Hardware
- NEMA Design B Performance
- Enclosure: WP1
- Non-Reverse Ratchet (Ball Type)
- Oil Bath with Large Reservoir (40 HP—500 HP)
- Cast Iron / Plate Steel Frame Construction
- Light Weight Hood for Easy Access
- Space Heaters
- Resistance Temperature Detector (RTD) (300 HP—500 HP)
- Thermal Protected
- Corrosion Resistant Epoxy Paint
- Lifting Provisions
- Two (2) Year Warrant (Extended Warranty Available)



Coupling Included
V2 - 20:1 Speed Range

APPLICATIONS:

Designed primarily for deep well turbine pump applications. The coupling is equipped with a non-reverse ratchet, which prevents motor rotation from backspin at shut-down. These motors are built to NEMA standards and have special bearing arrangements to carry heavy thrust loads.

#V2 - VERTICAL HOLLOW SHAFT MOTORS

Catalog Number	Description	Cost
V2-50D4-W32616A	50 HP, 1800 RPM, 326TP Frame, 230/460V, includes 1.250 Coupling	\$3,121.05
V2-50D4-W32616B	50 HP, 1800 RPM, 326TP Frame, 230/460V, includes 1.188 Coupling	\$3,121.05
V2-50S4-W32616A	50 HP, 1800 RPM, 326TP Frame, 460V, 3PH, includes 1.250 Coupling	\$3,121.05
V2-60D4-W36416A	60 HP, 1800 RPM, 364TP Frame, 230/460V, includes 1.250 Coupling	\$3,299.02
V2-60D4-W36416B	60 HP, 1800 RPM, 364TP Frame, 230/460V, includes 1.188 Coupling	\$3,299.02
V2-60S4-W36416A	60 HP, 1800 RPM, 364TP Frame, 460V, includes 1.250 Coupling	\$3,299.02
V2-60S4-W36416B	60 HP, 1800 RPM, 364TP Frame, 460V, includes 1.188 Coupling	\$3,299.02
V2-75D4-W36516A	75 HP, 1800 RPM, 365TP Frame, 230/460V, includes 1.250 Coupling	\$4,247.18
V2-75D4-W36516B	75 HP, 1800 RPM, 365TP Frame, 230/460V, includes 1.188 Coupling	\$4,247.18
V2-75S4-W36516A	75 HP, 1800 RPM, 365TP Frame, 460V, includes 1.250 Coupling	\$4,247.18
V2-75S4-W36516B	75 HP, 1800 RPM, 365TP Frame, 460V, includes 1.188 Coupling	\$4,247.18
V2-100D4-W40416A	100 HP, 1800 RPM, 404TP Frame, 230/460V, includes 1.500 Coupling	\$5,370.61
V2-100D4-W40416B	100 HP, 1800 RPM, 404TP Frame, 230/460V, includes 1.188 Coupling	\$5,370.61
V2-100S4-W40416A	100 HP, 1800 RPM, 404TP Frame, 460V, includes 1.500 Coupling	\$5,370.61
V2-100S4-W40416A-EHT	100 HP, 1800 RPM, 404TP Frame, 460V, Extra High Thrust, includes 1.500 Coupling	\$5,976.60
V2-125S4-W40516A	125 HP, 1800 RPM, 405TP Frame, 460V, includes 1.500 Coupling	\$5,765.50
V2-125S4-W40516A-EHT	125 HP, 1800 RPM, 405TP Frame, 460V, Extra High Thrust, includes 1.500 Coupling	\$6,321.11
V2-150S4-W44416A	150 HP, 1800 RPM, 444TP Frame, 460V, includes 1.688 Coupling	\$6,874.20
V2-150S4-W44416A-EHT	150 HP, 1800 RPM, 444TP Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$7,565.58
V2-200S4-W44516A	200 HP, 1800 RPM, 445TP Frame, 460V, includes 1.688 Coupling	\$9,916.24
V2-200S4-W44516A-EHT	200 HP, 1800 RPM, 445TP Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$10,548.35
V2-250S4-W44516A	250 HP, 1800 RPM, 445TP Frame, 460V, includes 1.938 Coupling	\$11,021.18
V2-250S4-W44516A-EHT	250 HP, 1800 RPM, 445TP Frame, 460V, Extra High Thrust, includes 1.938 Coupling	\$11,799.77
V2-300S4-W500624A-EHT	300 HP, 1800 RPM, 5006P Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$15,814.79
V2-350S4-W500624A-EHT	350 HP, 1800 RPM, 5006P Frame, 460V, Extra High Thrust, includes 1.688 Coupling	\$17,260.23



#ENGINEER IN THE BOX



Take the Support Engineer out of the office and re-task permanently inside the custom AC drive design from our Design Build Laboratory with an exclusive B&D Edge Device.

ALL OF THE SUPPORT SOFTWARE IS LOADED ON THE ADVANCED EDGE DEVICE IN THE BOX - THIS GIVES US THE BEST DIAGNOSTICS ANYWHERE

Remote Support Simplicity

- \$1,500 per year for a three-year contract
- This design is cellular – no need for cyber-security
- We handle cellular bills, updates, and hardware
- Can be used on multiple drives in same cabinet
- Remote Services
 - \$125 per hour service rate when you need us
 - One tune-up per year included in the annual cost



**B&D EXCLUSIVE
BRAND**



**LOCAL
INVENTORY**



**LABORATORY
TESTED**

**ONE BREAKDOWN WILL COST MORE THAN THIS
ADVANCED DIAGNOSTIC SERVICE AND IT IS
SAFER FOR EVERYONE DURING COVID-19**

