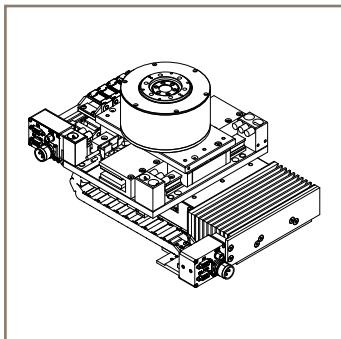


aerospace  
climate control  
**electromechanical**  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



# Parker P series Direct Drive Rotary Motors



北京润诚时代科技有限公司

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ENGINEERING YOUR SUCCESS.

**Master using Step and Direction Command**



**EtherCAT Master**



**WARNING — USER RESPONSIBILITY**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

# Powerful Direct Drive Motors

## Easy configuration

- once the motor is connected to P series drive it will automatically recognize the motor

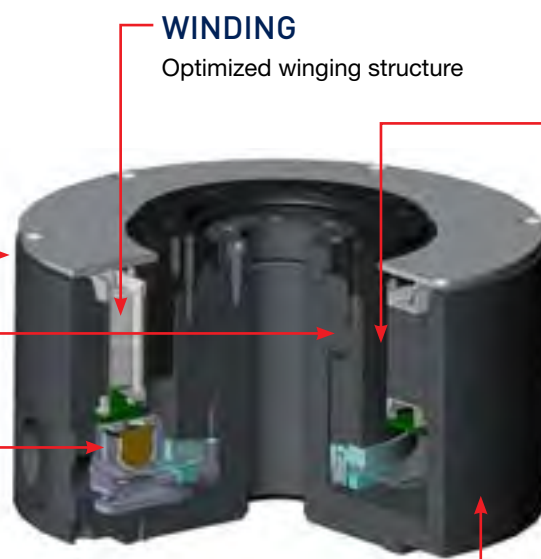
## Various control option

- Predefined Profile mode provides ideal indexing feature for your machine
- EtherCAT gives high speed communication for multi-axis solutions

### SERVO DRIVE

Ideal direct drive solution for P series drive

- 100~400W : PD-04P & 04C
- 400~1kW : PD-10P & 10C
- 1kW~3.5kW : PD-35P & 35C



**WINDING**  
Optimized winging structure

**MAGNET**  
High torque density by using highest class rated Neodymium permanent magnet

**BEARING**  
Low vibration and outstanding mechanical accuracy by improved bearing design

**ENCODER**  
High resolution absolute feedback as standard (20 bit BiSS-C)

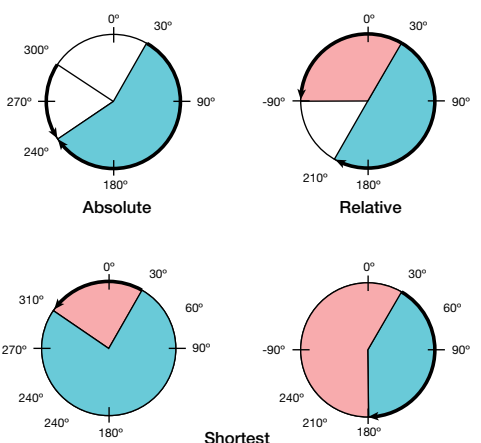
**FRAME**  
5 frame size - 135mm/175mm/230mm/290mm/360mm  
various height is available as custom option  
Rated speed : 200RPM / 150RPM

# Pre-defined profile function with Parker Drive

- Available 64 profiles



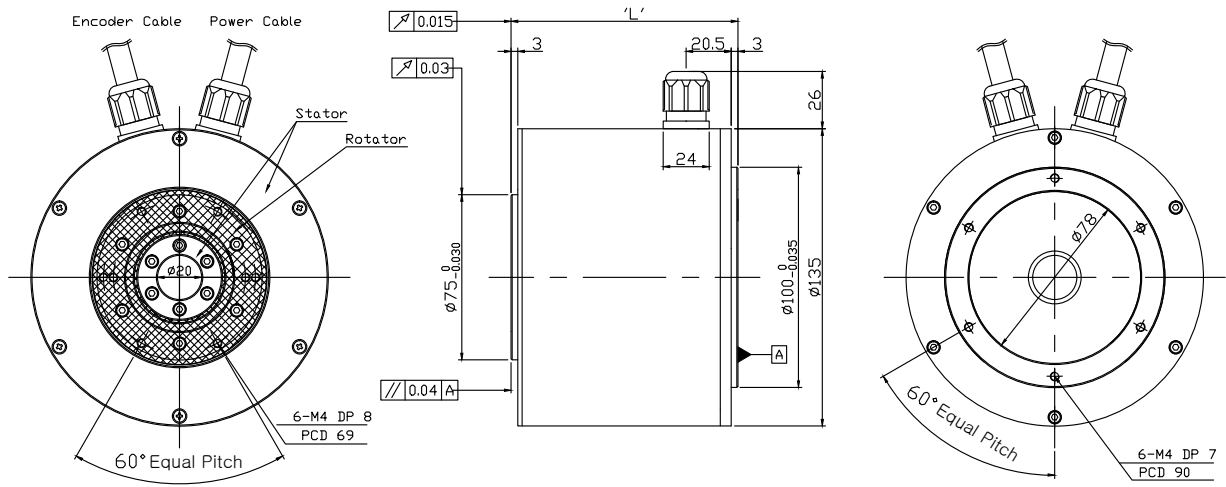
- Rotary Absolute/Relative/Shortest move



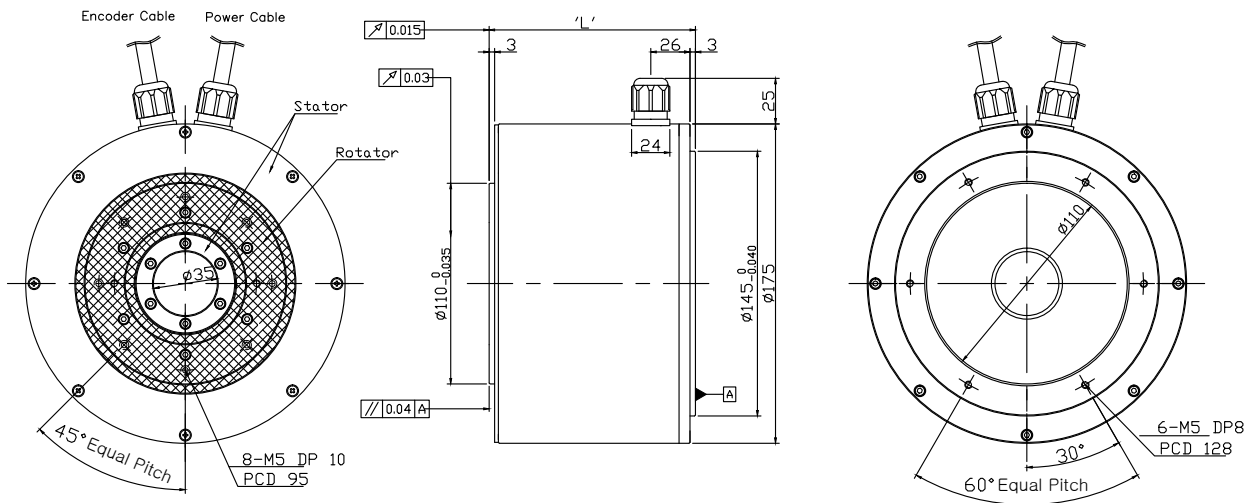
# Basic specification

| Motor                      |                                     | PM- <b>DD</b> B□□D□H                                    |       |       | PM- <b>DD</b> C□□D□H |       |        | PM- <b>DD</b> D□□D□H |       |       | PM- <b>DD</b> E□□D□H |        | PM- <b>DD</b> F□□G□H |        |
|----------------------------|-------------------------------------|---|-------|-------|----------------------|-------|--------|----------------------|-------|-------|----------------------|--------|----------------------|--------|
|                            |                                     | 03  | 06    | 09    | 06                   | 12    | 18     | 12                   | 22    | 34    | 40                   | 60     | A1                   | A6     |
| P series Drive             |                                     | PD-04   | PD-04 | PD-04 | PD-04                | PD-04 | PD-04  | PD-04                | PD-10 | PD-10 | PD-10                | PD-35  | PD-35                | PD-35  |
| Diameter                   | mm                                  | ø135  |       |       | ø175                 |       |        | ø230                 |       |       | ø290                 |        | ø360                 |        |
| Rated Power                | W                                   | 63  | 126   | 188   | 126                  | 251   | 377    | 251                  | 461   | 712   | 838                  | 1,257  | 1,728                | 2,513  |
| Rated Torque               | N-m                                 | 3   | 6     | 9     | 6                    | 12    | 18     | 12                   | 22    | 34    | 40                   | 60     | 110                  | 160    |
| Peak Torque                | N-m                                 | 9   | 18    | 27    | 18                   | 36    | 54     | 36                   | 66    | 102   | 120                  | 180    | 330                  | 480    |
| Rated Current              | Arms                                | 1.12  | 1.46  | 2.63  | 1.48                 | 2.41  | 3      | 2.58                 | 3.33  | 5.72  | 5.3                  | 8.33   | 9.48                 | 14.6   |
| Peak Current               | Arms                                | 3.36  | 4.38  | 7.89  | 4.44                 | 7.23  | 9      | 7.74                 | 9.99  | 17.16 | 15.9                 | 24.99  | 28.44                | 43.8   |
| Rated Velocity             | rpm                                 | 200   |       |       | 200                  |       |        | 200                  |       |       | 200                  |        | 150                  |        |
| Max. Velocity              | rpm                                 | 500   | 500   | 500   | 500                  | 500   | 400    | 500                  | 400   | 400   | 300                  | 300    | 250                  | 250    |
| Torque Constant            | N-m/Arms                            | 2.76  | 4.25  | 3.57  | 4.18                 | 5.13  | 6.12   | 4.8                  | 6.81  | 6.13  | 7.77                 | 7.42   | 11.95                | 11.29  |
| Moment of Inertia          | kg-m <sup>2</sup> x10 <sup>-4</sup> | 5.74  | 8.67  | 11.5  | 27.32                | 38.9  | 50.48  | 54.14                | 68.15 | 82.16 | 311.55               | 371.71 | 1410.2               | 1763.4 |
| Power Rate                 | kW/s                                | 15.68   | 42.35 | 70.43 | 13.18                | 52.71 | 118.59 | 26.6                 | 71.02 | 140.7 | 51.36                | 96.68  | 85.9                 | 145.4  |
| Angular Accel              | rad/s <sup>2</sup>                  | 191.2   | 141.6 | 127.7 | 455.03               | 323.9 | 280.3  | 450.9                | 309.6 | 241.5 | 778.35               | 619.1  | 1281.13              | 1101.4 |
| Accuracy for ABS Position  | arc-sec                             | ±30   |       |       |                      |       |        |                      |       |       |                      |        |                      |        |
| Accuracy for Repeatability | arc-sec                             | ±1.3  |       |       |                      |       |        |                      |       |       |                      |        |                      |        |
| Axial run-out              | mm                                  | 0.015   |       |       |                      |       |        |                      |       |       |                      |        |                      |        |
| Radial run-out             | mm                                  | 0.03  |       |       |                      |       |        |                      |       |       |                      |        |                      |        |
| Allow. thrust load         | N                                   | 1500  |       |       | 3300                 |       |        | 4000                 |       |       | 11000                |        | 15000                |        |
| Allow. moment load         | N-m                                 | 40  |       |       | 70                   |       |        | 93                   |       |       | 250                  |        | 350                  |        |
| Encoder                    |                                     | 20-bit single turn serial encoder ( BiSS-C / Absolute ) |       |       |                      |       |        |                      |       |       |                      |        |                      |        |
| Weight(Approx.)            | kg                                  | 6.3   | 7.2   | 9.2   | 8.7                  | 10.6  | 12.6   | 17.3                 | 19.6  | 21.9  | 28.2                 | 35     | 54                   | 70.3   |

# Dimensions

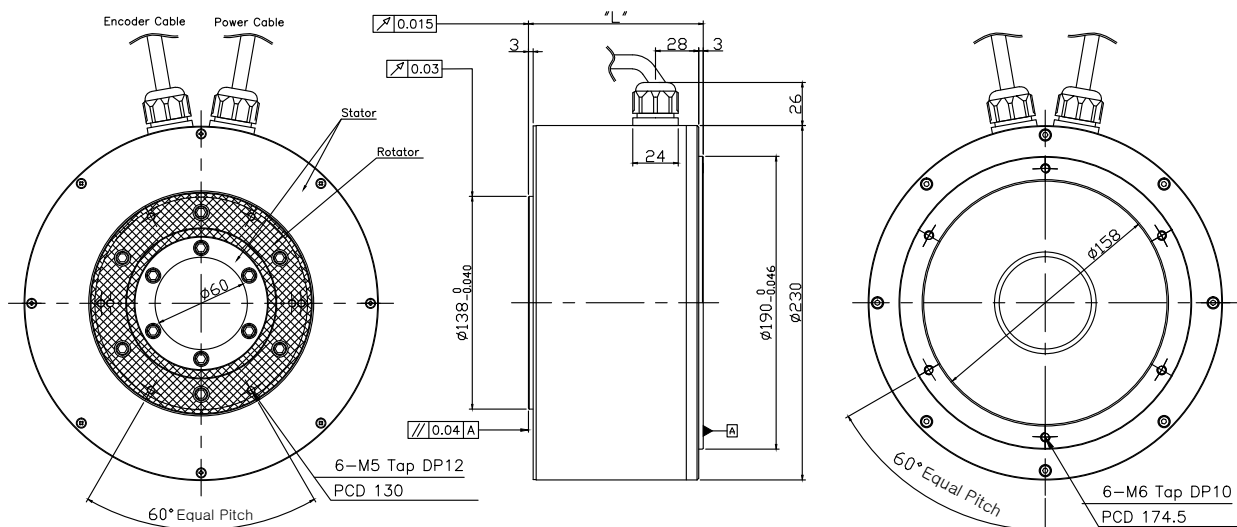


| Size B    |                   |             |
|-----------|-------------------|-------------|
| Product   | Length ( mm ) 'L' | Weight (Kg) |
| PM-DDB03D | 78                | 6.3         |
| PM-DDB06D | 100               | 7.2         |
| PM-DDB09D | 124               | 9.2         |

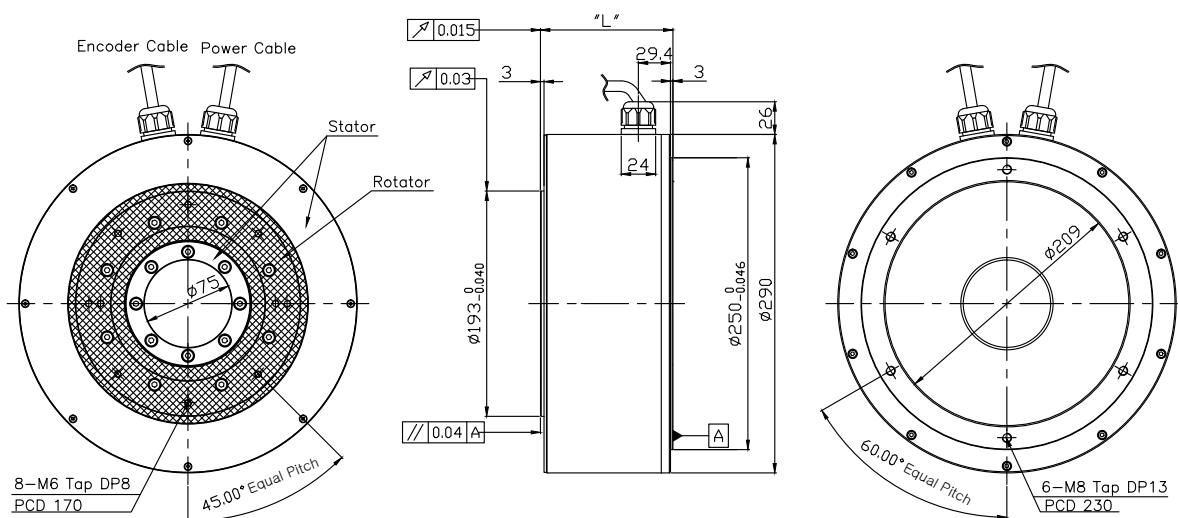


| Size C    |                   |             |
|-----------|-------------------|-------------|
| Product   | Length ( mm ) 'L' | Weight (Kg) |
| PM-DDC06D | 77                | 8.7         |
| PM-DDC12D | 95                | 10.6        |
| PM-DDC18D | 113               | 12.6        |

# Dimensions

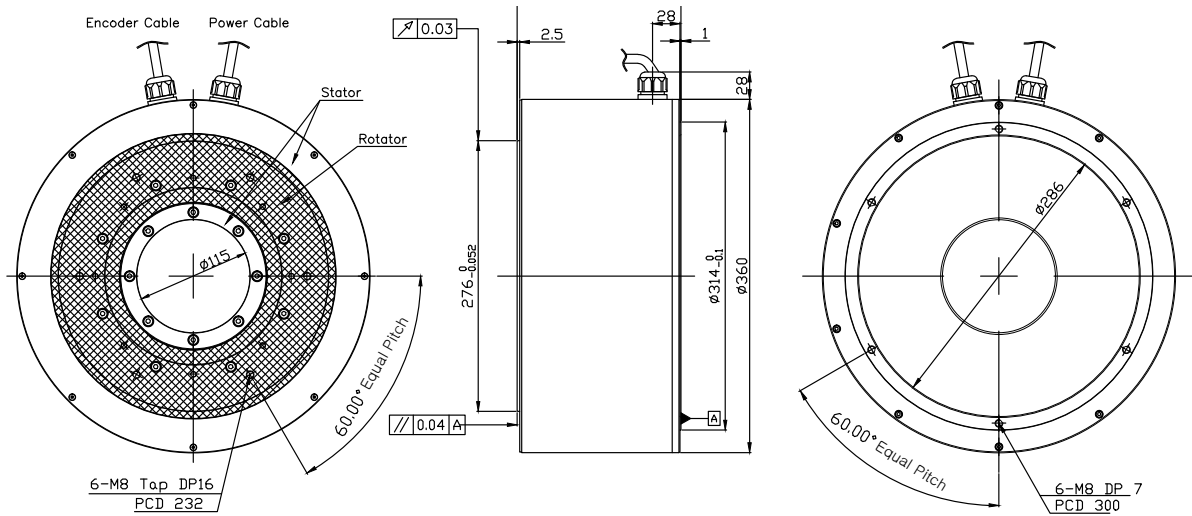


| Size D    |                   |             |
|-----------|-------------------|-------------|
| Product   | Length ( mm ) 'L' | Weight (Kg) |
| PM-DDD12D | 82.5              | 17.3        |
| PM-DDD22D | 100.5             | 19.6        |
| PM-DDD34D | 118.5             | 21.9        |



| Size E    |                   |             |
|-----------|-------------------|-------------|
| Product   | Length ( mm ) 'L' | Weight (Kg) |
| PM-DDE40D | 95.4              | 28.2        |
| PM-DDE60D | 113.4             | 35          |

# Dimensions

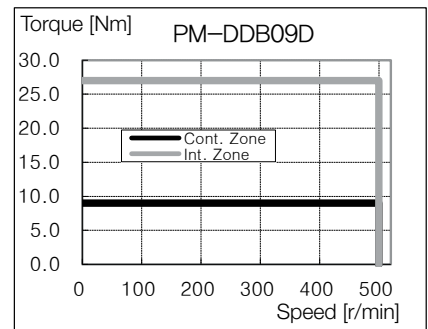
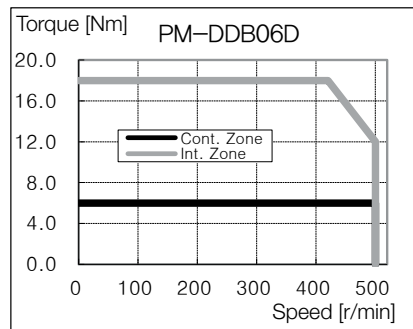
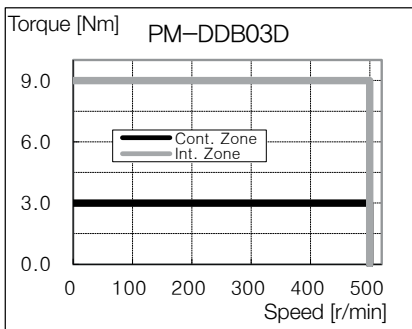


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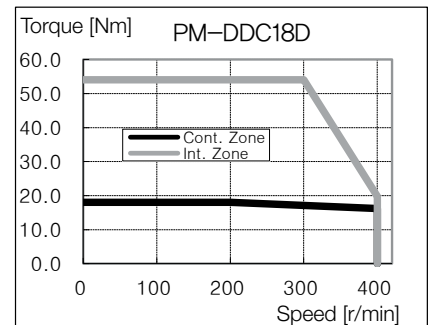
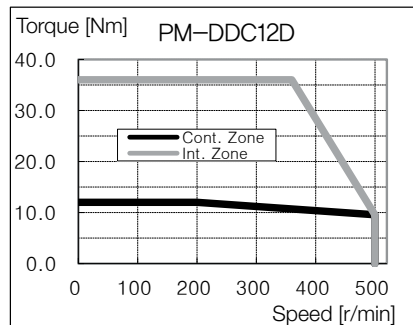
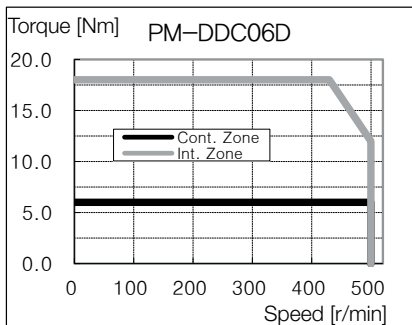
| Product   | Length ( mm ) 'L' | Weight (Kg) |
|-----------|-------------------|-------------|
| PM-DDFA1G | 131               | 54          |
| PM-DDFA6G | 167               | 70.3        |

# N-T curve

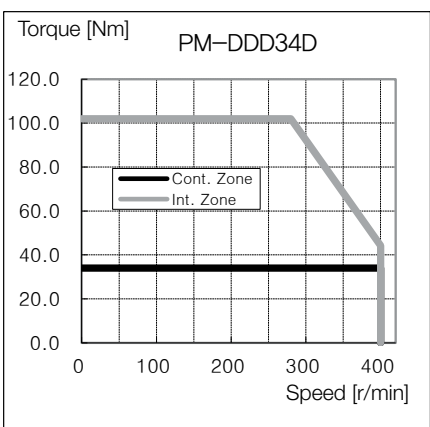
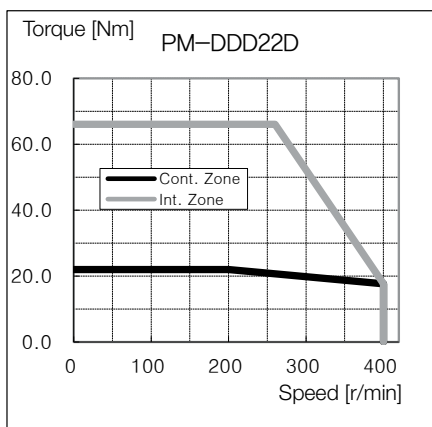
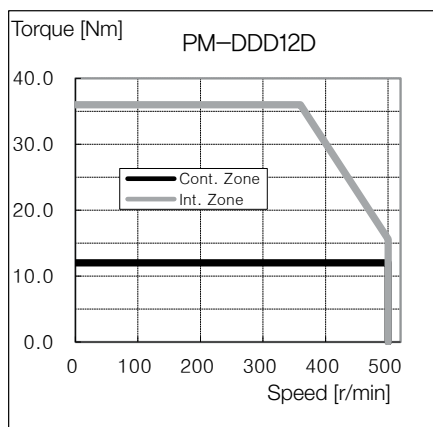
## Size B



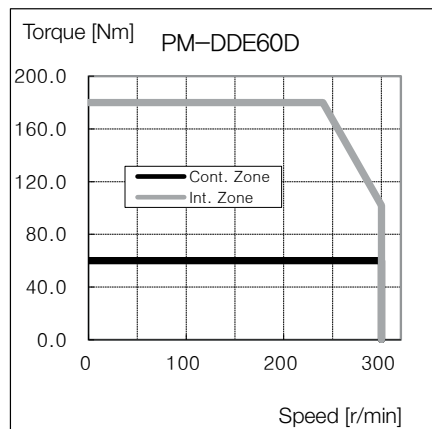
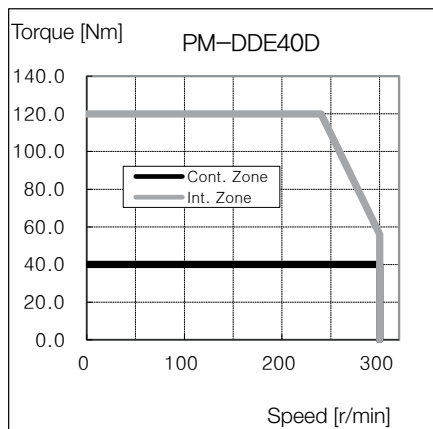
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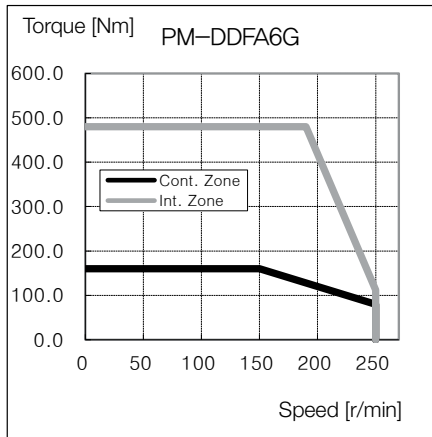
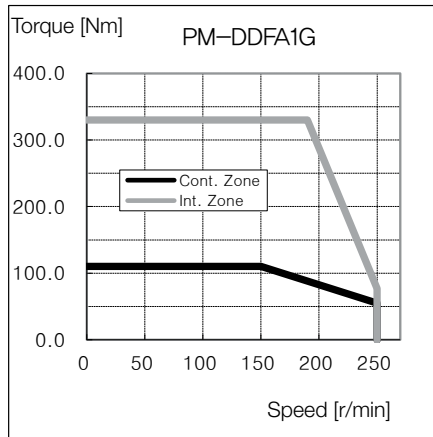
**Size D**



**Size E**



**Size F**





# Ordering Code

## Motor

P M-DD    B    60    A    NO    H   

| Code | Type     |
|------|----------|
| DD   | DD Motor |

| Code | Shaft Type               | Code | Voltage          |
|------|--------------------------|------|------------------|
| H    | Standard<br>Hollow shaft | None | 200V DD<br>Motor |

| Code | Diameter size           | Code | Torque |
|------|-------------------------|------|--------|
| B    | External Diameter 135mm | 03   | 3Nm    |
| C    | External Diameter 175mm | 06   | 6Nm    |
| D    | External Diameter 230mm | 09   | 9Nm    |
| E    | External Diameter 290mm | ---  | ---    |
| F    | External Diameter 360mm | 60   | 60Nm   |
|      |                         | ---  | ---    |
|      |                         | A6   | 160Nm  |

| Code | Encoder |     |       |       |     | Note                                     |
|------|---------|-----|-------|-------|-----|--|
|      | 135     | 175 | 230   | 290   | 360 |  |
| NO   | 20Bit   |     | 20Bit | 20Bit |     | Single turn ABS,<br>Biss-C Communication |

| Code | Rated Speed | Note                                      |
|------|-------------|---|
| D    | 200rpm      | Standard, $\phi$ 135~ $\phi$ 290 : 200rpm |
| G    | 150rpm      | Standard, $\phi$ 360 : 150rpm             |

## Cable

APCS    -    E    03    ZS

| Code |
|------|
| APCS |

| Code | Cable           |
|------|-----------------|
| E    | Encode Feedback |
| PN   | Motor Power     |

| Code | Length |
|------|--------|
| 03   | 3m     |
| 05   | 5m     |
| 10   | 10m    |
| 20   | 20m    |

| Code | Option  |
|------|---|
| ZS   | Standard Feedback Cable<br>Standard Power<br>Cable(PM-DDF series) |
| YS   | Standard Power<br>Cable(PM-DDB~E series)                          |



# Motion & Control Technologies...

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further information call:

1 800 C-Parker  
(1 800 272 7537)



## **Aerospace**

### **Key Markets**

Aftermarket services  
Commercial transports  
Engines  
General & business aviation  
Helicopters  
Launch vehicles  
Military aircraft  
Missiles  
Power generation  
Regional transports  
Unmanned aerial vehicles

### **Key Products**

Control systems & actuation products  
Engine systems & components  
Fluid conveyance systems & components  
Fluid metering, delivery & atomization devices  
Fuel systems & components  
Fuel tank inerting systems  
Hydraulic systems & components  
Thermal management  
Wheels & brakes



## **Climate Control**

### **Key Markets**

Agriculture  
Air conditioning  
Construction Machinery  
Food & beverage  
Industrial machinery  
Life sciences  
Oil & gas  
Precision cooling  
Process  
Refrigeration  
Transportation

### **Key Products**

Accumulators  
Advanced actuators  
CO<sub>2</sub> controls  
Electronic controllers  
Filter driers  
Hand shut-off valves  
Heat exchangers  
Hose & fittings  
Pressure regulating valves  
Refrigerant distributors  
Safety relief valves  
Smart pumps  
Solenoid valves  
Thermostatic expansion valves



## **Electromechanical**

### **Key Markets**

Aerospace  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Paper machinery  
Plastics machinery & converting  
Primary metals  
Semiconductor & electronics  
Textile  
Wire & cable

### **Key Products**

AC/DC drives & systems  
Electric actuators, gantry robots & slides  
Electrohydraulic actuation systems  
Electromechanical actuation systems  
Human machine interface  
Linear motors  
Stepper motors, servo motors, drives & controls  
Structural extrusions



## **Filtration**

### **Key Markets**

Aerospace  
Food & beverage  
Industrial plant & equipment  
Life sciences  
Marine  
Mobile equipment  
Oil & gas  
Power generation & renewable energy  
Process  
Transportation  
Water Purification

### **Key Products**

Analytical gas generators  
Compressed air filters & dryers  
Engine air, coolant, fuel & oil filtration systems  
Fluid condition monitoring systems  
Hydraulic & lubrication filters  
Hydrogen, nitrogen & zero air generators  
Instrumentation filters  
Membrane & fiber filters  
Microfiltration  
Sterile air filtration  
Water desalination & purification filters & systems



## **Fluid & Gas Handling**

### **Key Markets**

Aerial lift  
Agriculture  
Bulk chemical handling  
Construction machinery  
Food & beverage  
Fuel & gas delivery  
Industrial machinery  
Life sciences  
Marine  
Mining  
Mobile  
Oil & gas  
Renewable energy  
Transportation

### **Key Products**

Check valves  
Connectors for low pressure fluid conveyance  
Deep sea umbilicals  
Diagnostic equipment  
Hose couplings  
Industrial hose  
Mooring systems & power cables  
PTFE hose & tubing  
Quick couplings  
Rubber & thermoplastic hose  
Tube fittings & adapters  
Tubing & plastic fittings



## **Hydraulics**

### **Key Markets**

Aerial lift  
Agriculture  
Alternative energy  
Construction machinery  
Forestry  
Industrial machinery  
Machine tools  
Marine  
Material handling  
Mining  
Oil & gas  
Power generation  
Refuse vehicles  
Renewable energy  
Truck hydraulics  
Turf equipment

### **Key Products**

Accumulators  
Cartridge valves  
Electrohydraulic actuators  
Human machine interfaces  
Hybrid drives  
Hydraulic cylinders  
Hydraulic motors & pumps  
Hydraulic systems  
Hydraulic valves & controls  
Hydrostatic steering  
Integrated hydraulic circuits  
Power take-offs  
Power units  
Rotary actuators  
Sensors



## **Pneumatics**

### **Key Markets**

Aerospace  
Conveyor & material handling  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Transportation & automotive

### **Key Products**

Air preparation  
Brass fittings & valves  
Manifolds  
Pneumatic accessories  
Pneumatic actuators & grippers  
Pneumatic valves & controls  
Quick disconnects  
Rotary actuators  
Rubber & thermoplastic hose & couplings  
Structural extrusions  
Thermoplastic tubing & fittings  
Vacuum generators, cups & sensors



## **Process Control**

### **Key Markets**

Alternative fuels  
Biopharmaceuticals  
Chemical & refining  
Food & beverage  
Marine & shipbuilding  
Medical & dental  
Microelectronics  
Nuclear Power  
Offshore oil exploration  
Oil & gas  
Pharmaceuticals  
Power generation  
Pulp & paper  
Steel  
Water/wastewater

### **Key Products**

Analytical Instruments  
Analytical sample conditioning products & systems  
Chemical injection fittings & valves  
Fluoropolymer chemical delivery fittings, valves & pumps  
High purity gas delivery fittings, valves, regulators & digital flow controllers  
Industrial mass flow meters/controllers  
Permanent no-weld tube fittings  
Precision industrial regulators & flow controllers  
Process control double block & bleeds  
Process control fittings, valves, regulators & manifold valves



## **Sealing & Shielding**

### **Key Markets**

Aerospace  
Chemical processing  
Consumer  
Fluid power  
General industrial  
Information technology  
Life sciences  
Microelectronics  
Military  
Oil & gas  
Power generation  
Renewable energy  
Telecommunications  
Transportation

### **Key Products**

Dynamic seals  
Elastomeric o-rings  
Electro-medical instrument design & assembly  
EMI shielding  
Extruded & precision-cut, fabricated elastomeric seals  
High temperature metal seals  
Homogeneous & inserted elastomeric shapes  
Medical device fabrication & assembly  
Metal & plastic retained composite seals  
Shielded optical windows  
Silicone tubing & extrusions  
Thermal management  
Vibration dampening

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- 5. Claims;** Commencement of Actions. Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 30 days after delivery. Buyer shall notify Seller of any alleged breach of warranty within 30 days after the date the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for an amount due on any invoice) must be commenced within 12 months from the date of the breach without regard to the date breach is discovered.
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- 7. User Responsibility.** The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.
- 8. Loss to Buyer's Property.** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, will be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.
- 9. Special Tooling.** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.
- 10. Buyer's Obligation;** Rights of Seller. To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.
- 11. Improper use and Indemnity.** Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.
- 12. Cancellations and Changes.** Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.
- 13. Limitation on Assignment.** Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.
- 14. Force Majeure.** Seller does not assume the risk and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.
- 15. Waiver and Severability.** Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.
- 16. Termination.** Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Seller may immediately terminate this agreement, in writing, if Buyer: (a) commits a breach of any provision of this agreement (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) dissolves or liquidates all or a majority of its assets.
- 17. Governing Law.** This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.
- 18. Indemnity for Infringement of Intellectual Property Rights.** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.
- 19. Entire Agreement.** This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.
- 20. Compliance with Law, U. K. Bribery Act and U.S. Foreign Corrupt Practices Act.** Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the country or countries of the Territory in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.S. Anti-Kickback Act (the "Anti-Kickback Act"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer shall not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase products or otherwise benefit the business of Seller.



## 北京润诚时代科技有限公司

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