Electromagnetic Particle Clutches and Brakes
Models: POC, PHC-R, PMC-A3, POB, PRB and PTB-BL3

Performance Manual

Warner Electric
An Altra Industrial Motion Company
Introduction

This Performance Data manual provides torque curves and allowable heat dissipation curves for Warner Electric's magnetic particle clutches and brakes. The manual covers clutch models POC, PHC-R, and PMC. It also covers brake models POB, PRB, and PTB.

The information in this manual is valuable for selecting the correct unit for your specific application. For help in calculating your torque or heat dissipation requirements, please refer to your Warner Electric Tension Control Systems Catalog. This catalog also provides additional information to help you select a clutch, brake, or control for your application.

⚠️ **WARNING** Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.
Torque (kgfm) = 0.1383 x Torque (lb-ft)
Torque vs. Current Curve (Typical)
Type: POC/POB-2.5
(kgfm) (lb. ft.)
4.0
3.0
2.0
1.0
0 0.2 0.4 0.6 0.8 1.0
0 0.5 1.0 1.5 2.0
Rated Torque 2.5 Kgfm (18 lb. ft.)
Rated Current 1.25 Amp
Torque
Current (Amp.)
1.0
7.2
3.6
3.0
1.2 1.4

Torque vs. Current Curve (Typical)
Type: POC/POB-5
(kgfm) (lb. ft.)
8
4
2
0 0.5 1.0 1.5 2.0 2.5
0 0.5 1.0 1.5 2.0 2.5
Rated Torque 5 Kgfm (36 lb. ft.)
Rated Current 2.25 Amp
Torque
Current (Amp.)
14.5
7.2
6
2.0 2.5
1
3
5
7

Torque vs. Current Curve (Typical)
Type: POC/POB-10
(kgfm) (lb. ft.)
16
8
4
0 0.5 1.0 1.5 2.0 2.5 3.0
0 0.5 1.0 1.5 2.0 2.5 3.0
Rated Torque 10 Kgfm (72 lb. ft.)
Rated Current 2.20 Amp
Torque
Current (Amp.)
28.9
14.5
12
2.0 2.5
2
6
10
14

Torque (kgfm) = 0.1383 x Torque (lb.ft.)
Torque (kgfm) = 0.1383 \times \text{Torque (lb.ft.)}
Torque (kgfm) = 0.1383 X Torque (lb.ft.)
Torque (kgfm) = 0.1383 \times \text{Torque (lb.ft.)}
Torque (kgfcm) = 1.152 X Torque (lb.in.)
Torque vs. Current Curve (Typical)
Type: PRB-1.2H

Torque (kgfm) = 0.1383 \times \text{Torque (lb.ft.)}

Rated Torque 1.2 Kgfm (86 lb. ft.)
Rated Current 0.63 Amp

Torque vs. Current Curve (Typical)
Type: PRB-2.5H

Rated Torque 2.5 Kgfm (18 lb. ft.)
Rated Current 0.77 Amp

Torque vs. Current Curve (Typical)
Type: PRB-5H

Rated Torque 5 Kgfm (36 lb. ft.)
Rated Current 1.02 Amp
Torque vs. Current Curve (Typical)
Type: PRB-10H
(kgfm) (lb. ft.)
16
8
4
0 0.6 0.8 1.0 1.6
36.2
72.3
108
144
181
217
Rated Current 1.33 Amp
Rated Torque 10 Kgfm (72 lb. ft.)
Torque
Current (Amp.)
28.9
14.5
12
1.2 1.4
2
6
10
14
0.40.2

Torque vs. Current Curve (Typical)
Type: PRB-20H
(kgfm) (lb. ft.)
30
20
15
0 0.2 0.4 0.6 1.6
36.2
72.3
108
144
181
217
Rated Current 1.58 Amp
Rated Torque 20 Kgfm (144 lb. ft.)
Torque
Current (Amp.)
25
0.8 1.0
10
5
1.2 1.4

Torque (kgfm) = 0.1383 X Torque (lb.ft.)
Torque (kgfm) = 0.1383 \times \text{Torque (lb.ft.)}
Heat Dissipation (Watts) = 746 \times HP_t 
Heat Dissipation (Watts) = 0.0226 \times E^{\text{RATE}}
Heat Dissipation (Watts) = 746 X HP_t
Heat Dissipation (Watts) = 0.0226 X E_{RATE} (ft. lbs.) min.
Heat Dissipation (Watts) = 746 \times H_P_t \\
Heat Dissipation (Watts) = 0.0226 \times E_{RATE} \\
(\text{ft. lbs.}) \\
(\text{min.})
Heat Dissipation (Watts) = 746 \times HP_t
Heat Dissipation (Watts) = 0.0226 \times E_{RATE} (ft. lbs./min.)
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