

23HS SERIES 1.8°

Key Features

- High Torque
- High Accuracy
- Smooth Movement



General Specifications

Bi-polar

Model Number	Resistance per Phase	Inductance per Phase	Rated Current	Holding Torque		Detent Torque		Rotor Inertia	
	ohm	mH	A	mNm	oz-in	mNm	oz-in	g.cm ²	oz-in ²
23HS0402-02	1.2	2.3	2.1	500	70.82	22	3.12	135	0.74
23HS0403-02	2.8	7	1.3	500	70.82	22	3.12	135	0.74
23HS0404-01	0.75	1.75	2.5	500	70.82	22	3.12	135	0.74
23HS0406	1.6	4.3	1.5	500	70.82	22	3.12	135	0.74
23HS0411	0.65	1.3	2	390	55.22	22	3.12	135	0.74
23HS0412	11.4	22.4	0.71	480	67.97	22	3.12	135	0.74
23HS0413	4.3	10	1	500	70.82	22	3.12	135	0.74
23HS1407	2.7	7	1.5	850	120.40	32	4.53	220	1.21
23HS1408	1.5	3.7	2	850	120.40	32	4.53	220	1.21
23HS2403	2	6.4	2	1100	155.81	40	5.66	260	1.43
23HS2409-01	0.85	2.7	3	1000	141.64	40	5.66	260	1.43
23HS2416-03	1.0	3.1	2.6	1000	141.64	40	5.66	260	1.43
23HS2420-01	1.54	4.6	1.8	900	127.48	40	5.66	260	1.43
23HS2428	0.62	2	2.8	900	127.48	40	5.66	260	1.43
23HS2434	14	43	0.7	1000	141.64	40	5.66	260	1.43
23HS2438	5.6	20.4	1.15	1100	155.81	40	5.66	260	1.43
23HS2443	3.4	9.2	1.5	1000	141.64	40	5.66	260	1.43
23HS3409	1	3.36	3	1650	233.71	70	9.91	460	2.53
23HS3431-02	1.2	4	2.8	1650	233.71	70	9.91	460	2.53
23HS3432-02	2	7.5	2.1	1650	233.71	70	9.91	460	2.53
23HS3434	4.2	17	1.4	1650	233.71	70	9.91	460	2.53
23HS3442	7.9	27	1	1500	212.46	70	9.91	460	2.53
23HS3443	17.2	62	0.7	1650	233.71	70	9.91	460	2.53
23HS4401-09	1.0	2.4	2.4	700	99.15	28	3.96	180	0.99
23HS4402	0.65	1.6	3	700	99.15	28	3.96	180	0.99
23HS4404	1.7	4.2	2.1	750	106.23	28	3.96	180	0.99
23HS5402-08	0.5	1.8	6	2700	382.44	120	17.00	750	4.13
23HS5408	2	7.2	3	2700	382.44	120	17.00	750	4.13

0.9°

1.8°

2-PHASE

3.6°

3.75°

HB MOTOR

1.2°

3-PHASE

DIGITAL LINEAR
ACTUATORINTERGRATED
STEPPING MOTORMOTOR
DRIVER

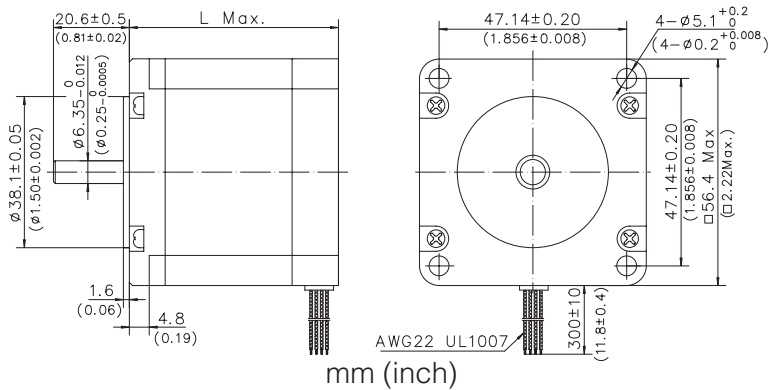
Uni-polar

Model Number	Resistance per Phase	Inductance per Phase	Rated Current	Holding Torque		Detent Torque		Rotor Inertia	
	ohm	mH	A	mNm	oz-in	mNm	oz-in	g.cm ²	oz-in ²
23HS0602-02	5.7	6.0	1	390	55.22	22	3.12	135	0.74
23HS0603	1.4	1.6	2	400	56.64	22	3.12	135	0.74
23HS0605	4.9	6.0	1	400	56.64	22	3.12	135	0.74
23HS0609	0.6	0.6	3	380	53.81	22	3.12	135	0.74
23HS0611	2.2	2.2	1.5	380	53.81	22	3.12	135	0.74
23HS1602	1.65	2.47	2.1	700	99.12	32	4.53	260	1.43
23HS1604	6.3	12	1.0	680	96.29	32	4.53	220	1.21
23HS1605	2.75	3.7	1.5	660	93.46	32	4.53	220	1.21
23HS1606	1	1.4	2.7	700	99.12	32	4.53	260	1.43
23HS2602-03	0.75	1.12	3	800	113.31	40	5.66	260	1.43
23HS2603-06	1.8	2.7	2	800	113.31	40	5.66	260	1.43
23HS2611-03	7.4	12.5	1	850	120.40	40	5.66	260	1.43
23HS2619	3.4	5.5	1.5	800	113.31	40	5.66	260	1.43
23HS3604-02	4.1	7.6	1.5	1300	184.14	70	9.91	460	2.53
23HS3605-06	2.25	4.6	2	1200	169.97	70	9.91	460	2.53
23HS3606-04	1	2.1	3	1200	169.97	70	9.91	460	2.53
23HS3607-01	8.6	17	1	1200	169.97	70	9.91	460	2.53
23HS5604	1	1.8	4.3	2000	283.29	120	17.00	760	4.13

Motor Wiring Diagram → Page A-8

Mechanical Dimension

Model Number	L	Mass
	mm (in.)	kg (lb.)
23HS0**	41 (1.61)	0.42 (0.93)
23HS1**	50 (1.97)	0.55 (1.21)
23HS2**	54 (2.13)	0.60 (1.32)
23HS3**	76 (2.99)	1.00 (2.20)
23HS4**	45 (1.77)	0.48 (1.06)
23HS5**	111 (4.37)	1.50 (3.30)



□ 0.39in.
(□ 10mm)

□ 1.10in.
(□ 28mm)

□ 1.38in.
(□ 35mm)

□ 1.53in.
(□ 39mm)

□ 1.65in.
(□ 42mm)

□ 2.22in.
(□ 56.4mm)

∅ 2.25in.
(∅ 57.2mm)

□ 2.36in.
(□ 60mm)

□ 3.35in.
(□ 85mm)

∅ 3.39in.
(∅ 86mm)

0.9°

1.8°

3.6°

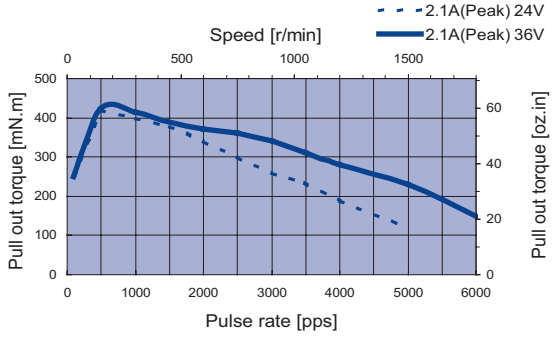
3.75°

1.2°

Dynamic Torque Curves

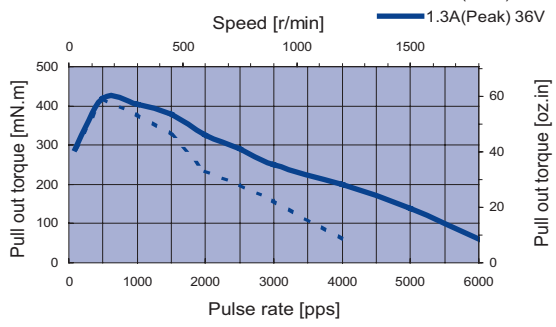
23HS0402-02

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



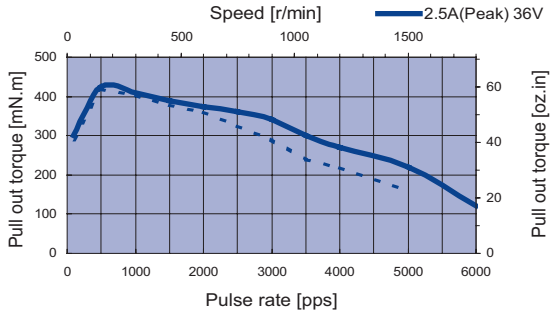
23HS0403-02

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



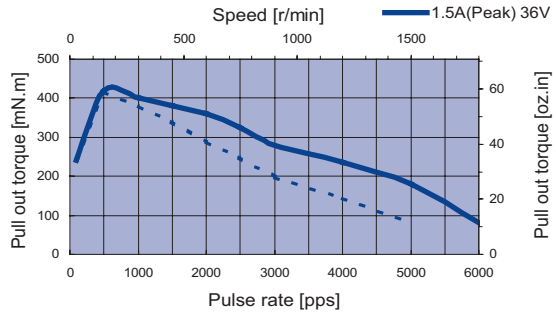
23HS0404-01

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



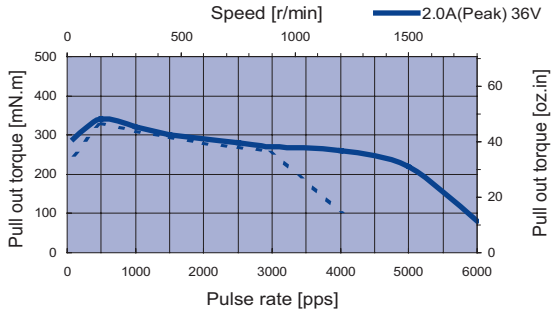
23HS0406

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



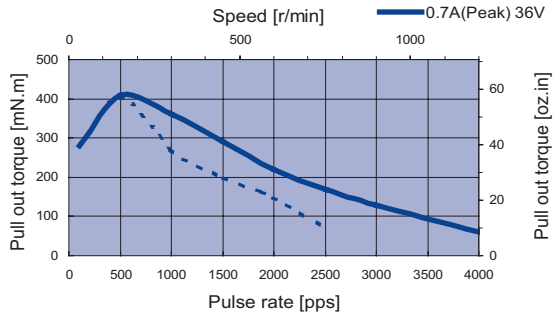
23HS0411

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



23HS0412

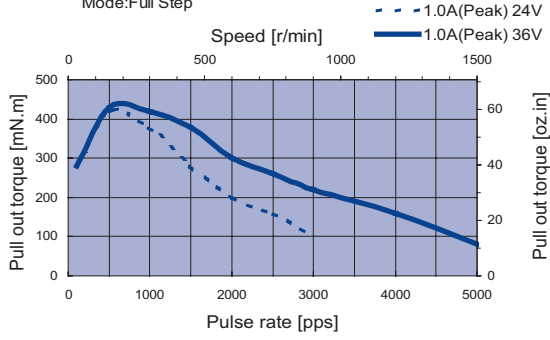
Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



Dynamic Torque Curves

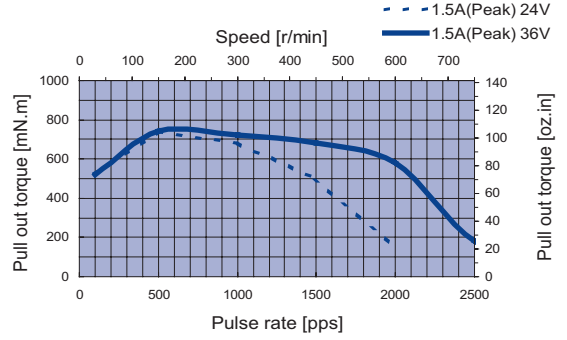
23HS0413

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



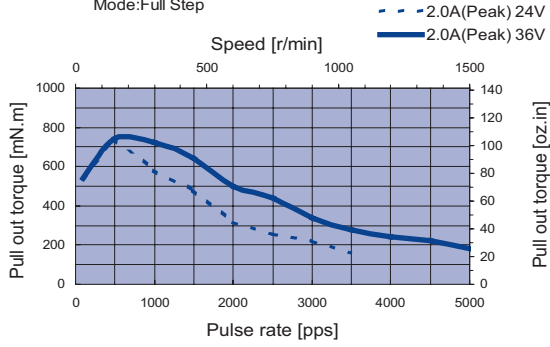
23HS1407

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



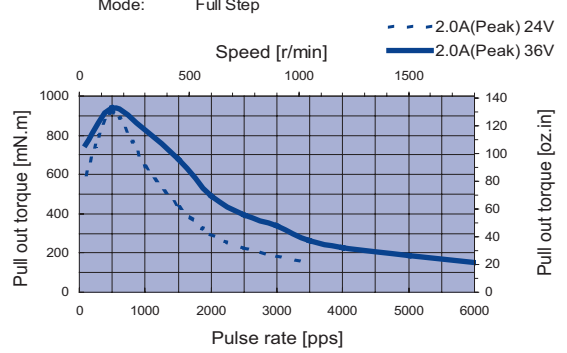
23HS1408

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



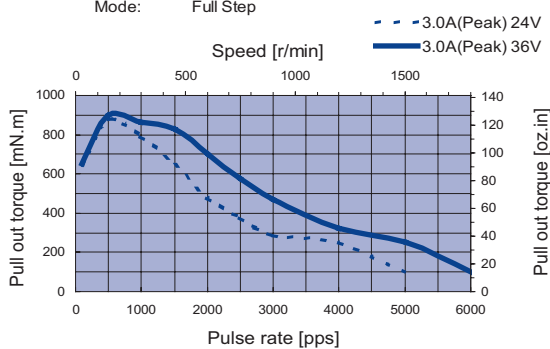
23HS2403

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



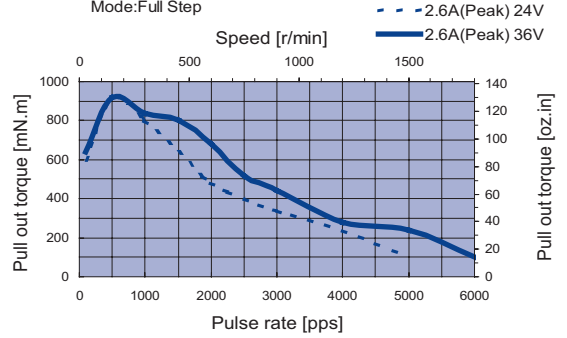
23HS2409-01

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



23HS2416-03

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



0.39in.
(10mm)

1.10in.
(28mm)

1.38in.
(35mm)

1.53in.
(39mm)

1.65in.
(42mm)

2.22in.
(56.4mm)

Ø2.25in.
(Ø57.2mm)

2.36in.
(60mm)

3.35in.
(85mm)

Ø3.39in.
(Ø86mm)

0.9°

1.8°

3.6°

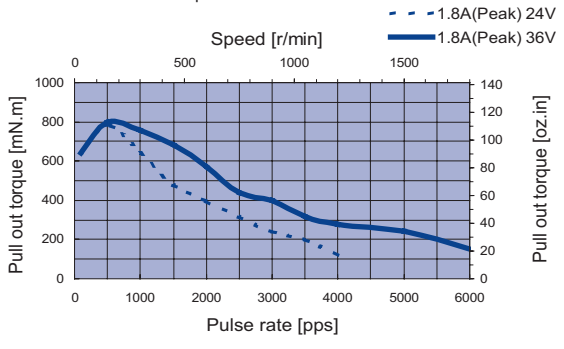
3.75°

1.2°

Dynamic Torque Curves

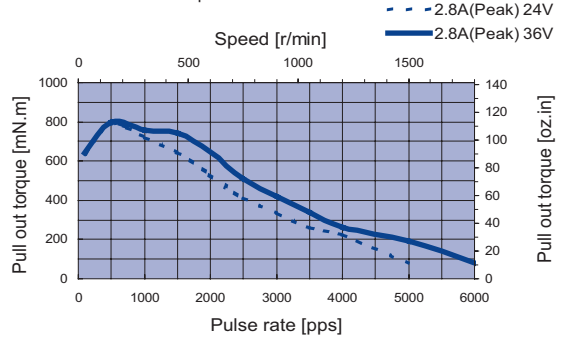
23HS2420-01

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



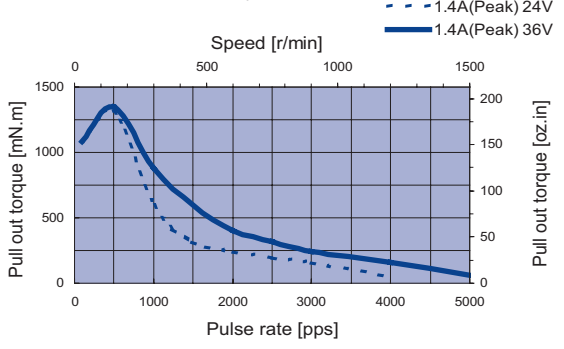
23HS2428

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



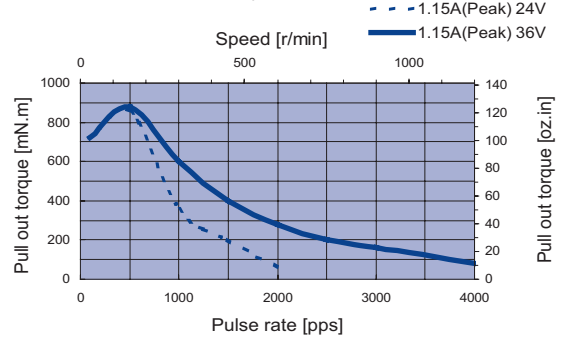
23HS3434

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



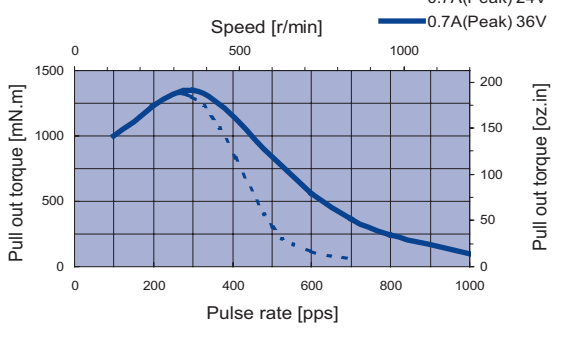
23HS2438

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



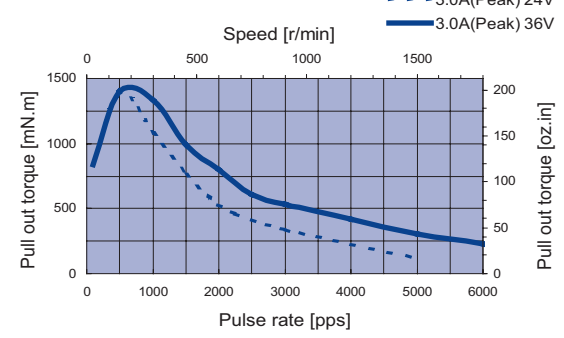
23HS3443

Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



23HS3409

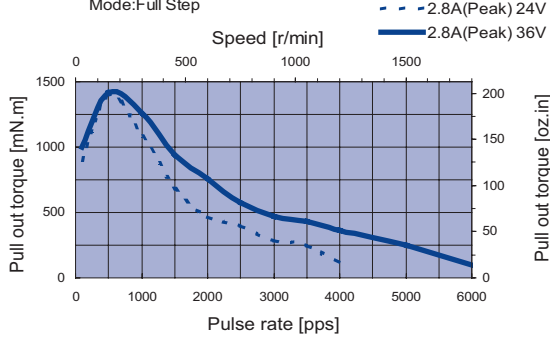
Conditions: Bi-polar Constant Current Driver
IC: AMA MS3540M
Mode: Full Step



Dynamic Torque Curves

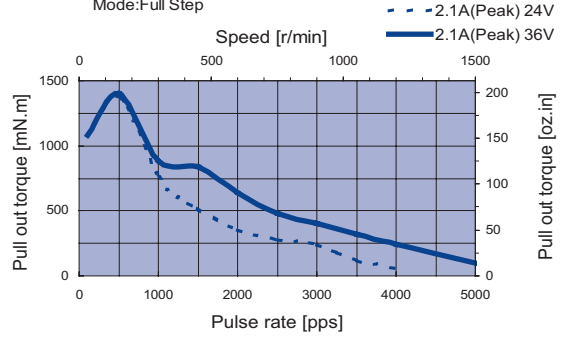
23HS3431-02

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



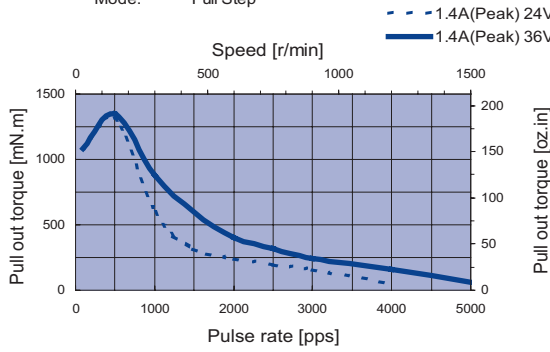
23HS3432-02

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



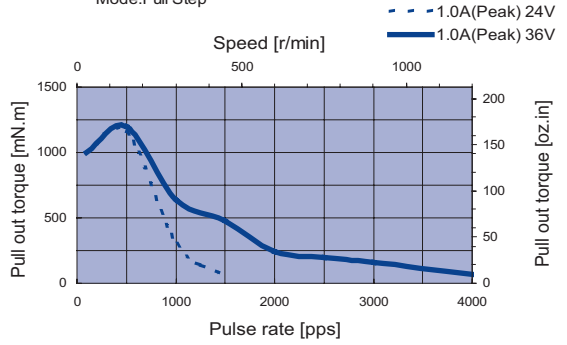
23HS3434

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



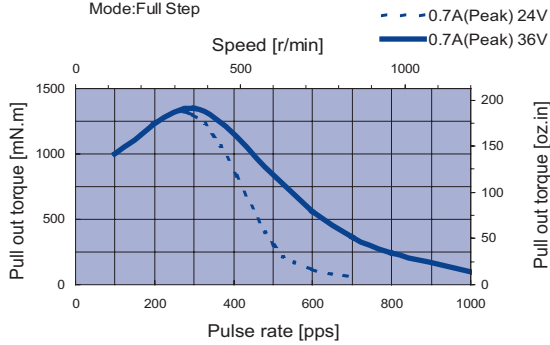
23HS3442

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



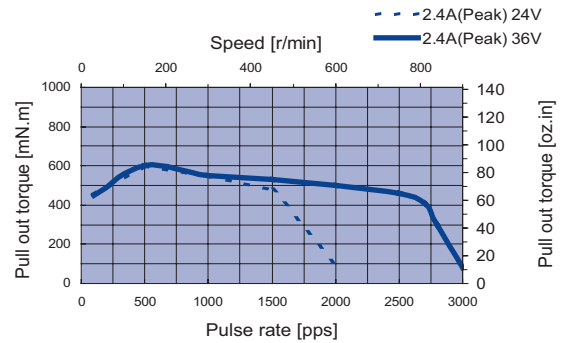
23HS3443

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



23HS4401-09

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



0.39in.
(10mm)

1.10in.
(28mm)

1.38in.
(35mm)

1.53in.
(39mm)

1.65in.
(42mm)

2.22in.
(56.4mm)

Ø2.25in.
(Ø57.2mm)

2.36in.
(60mm)

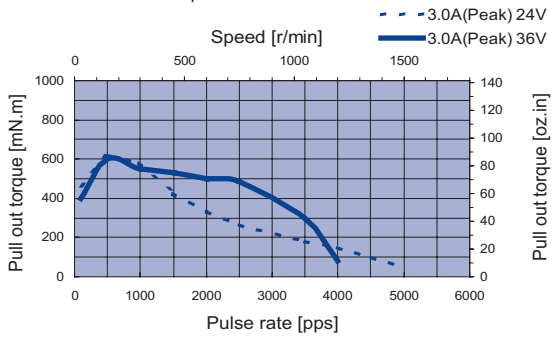
3.35in.
(85mm)

Ø3.39in.
(Ø86mm)

Dynamic Torque Curves

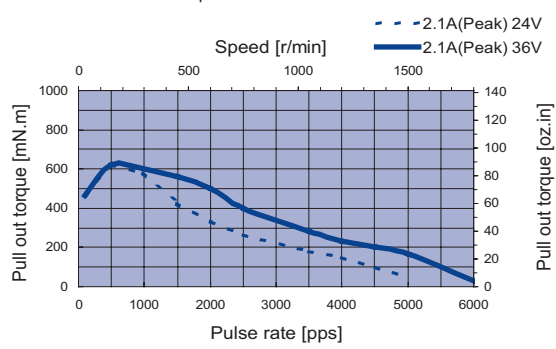
23HS4402

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



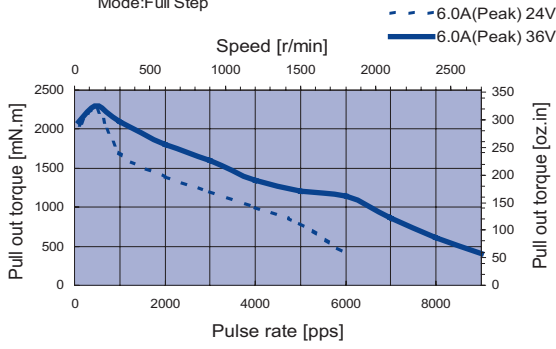
23HS4404

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



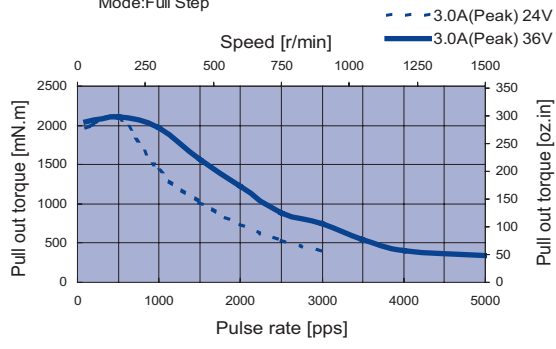
23HS5402-08

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



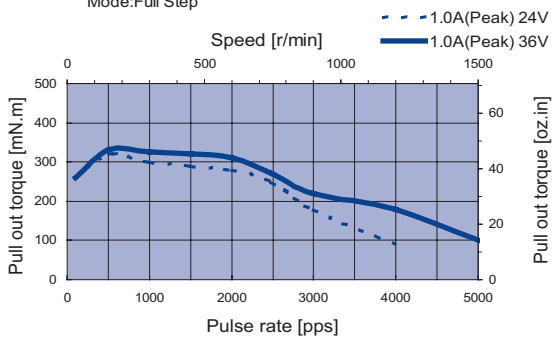
23HS5408

Conditions: Bi-polar Constant Current Driver
 IC: AMA MS3540M
 Mode: Full Step



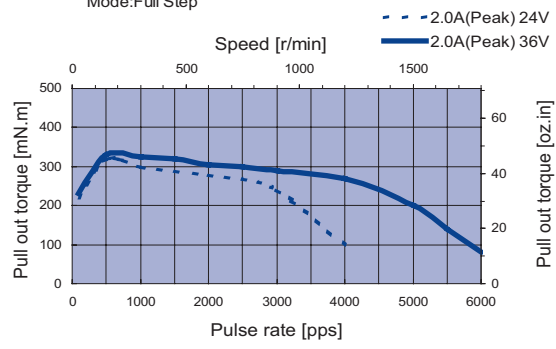
23HS0602-02

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



23HS0603

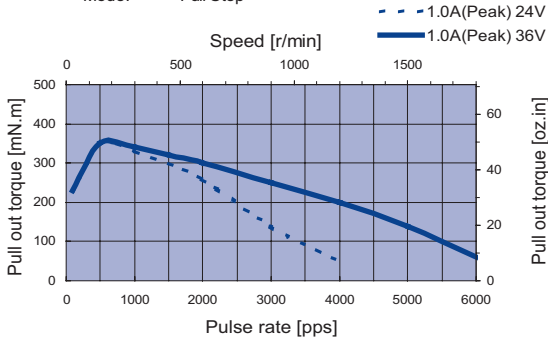
Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



Dynamic Torque Curves

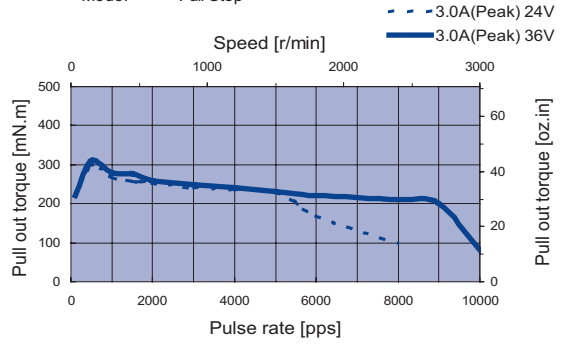
23HS0605

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



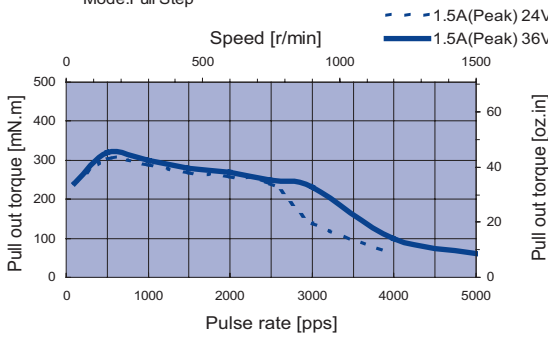
23HS0609

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



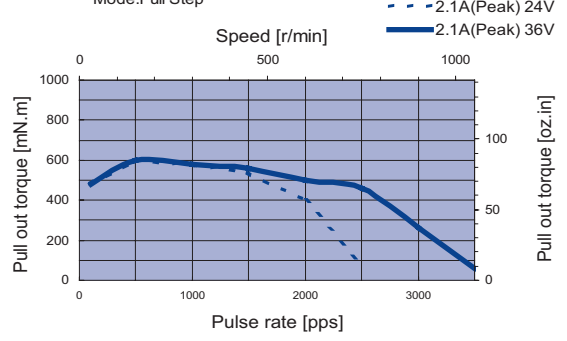
23HS0611

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



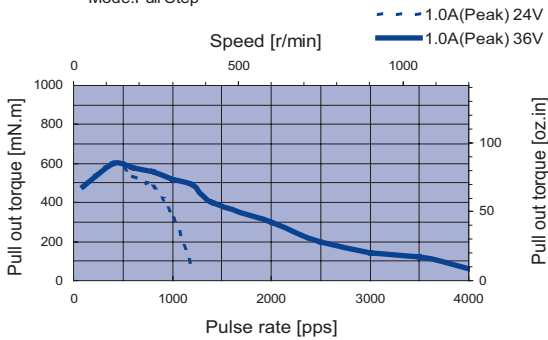
23HS1602

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



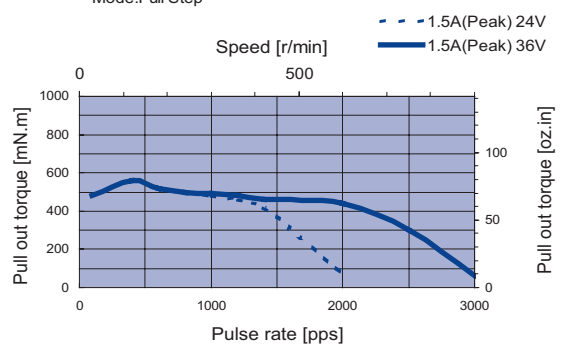
23HS1604

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



23HS1605

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



0.39in.
(10mm)

1.10in.
(28mm)

1.38in.
(35mm)

1.53in.
(39mm)

1.65in.
(42mm)

2.22in.
(56.4mm)

Ø2.25in.
(Ø57.2mm)

2.36in.
(60mm)

3.35in.
(85mm)

Ø3.39in.
(Ø86mm)

0.9°

1.8°

3.6°

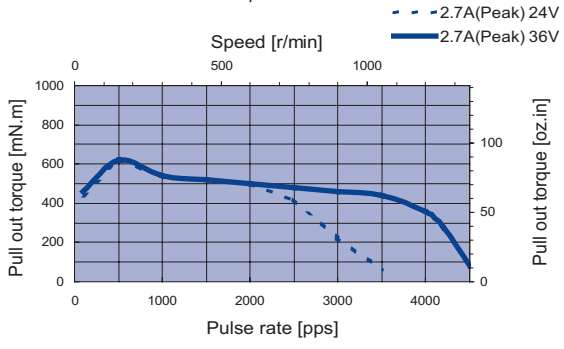
3.75°

1.2°

Dynamic Torque Curves

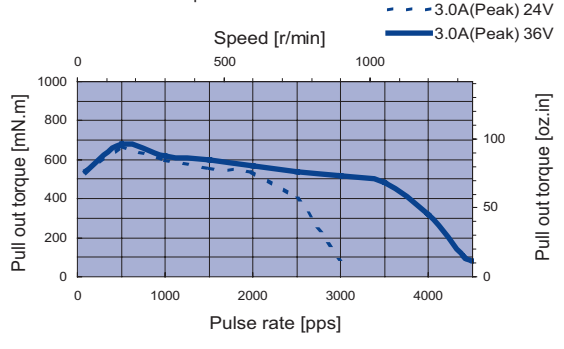
23HS1606

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



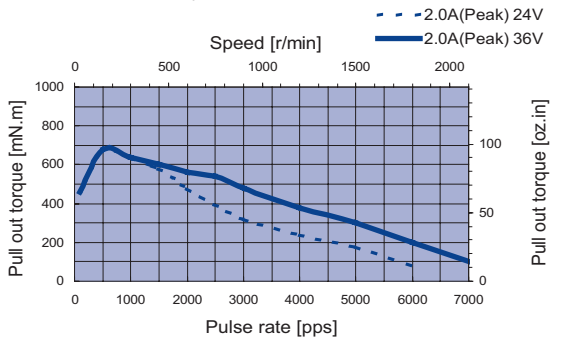
23HS2602-03

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



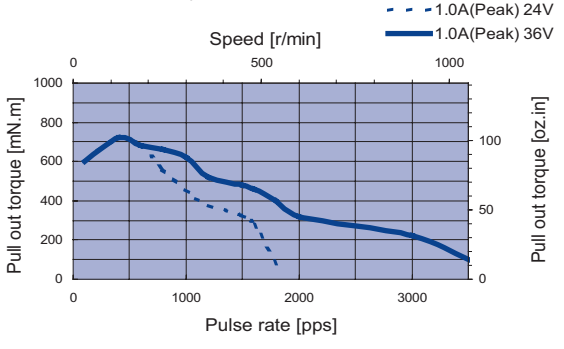
23HS2603-06

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



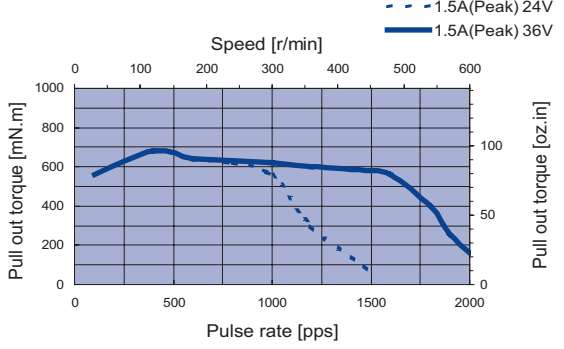
23HS2611-03

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



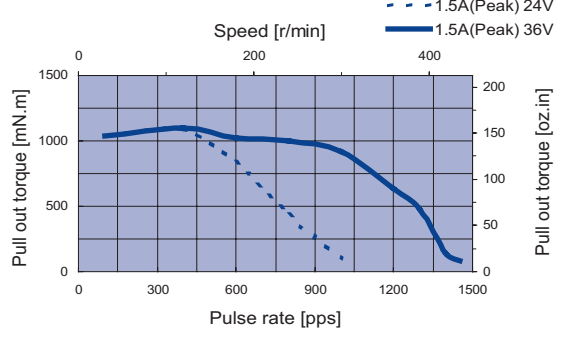
23HS2619

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



23HS3604-02

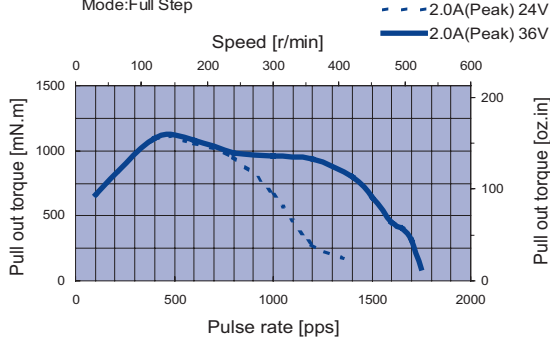
Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



Dynamic Torque Curves

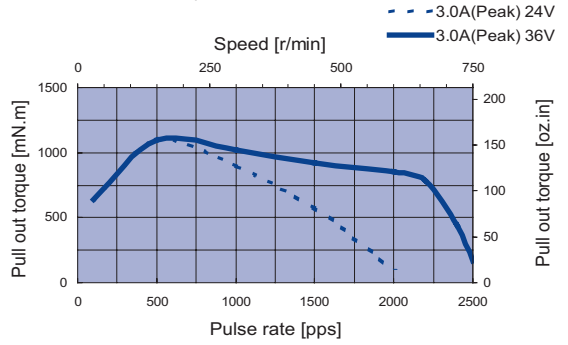
23HS3605-06

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



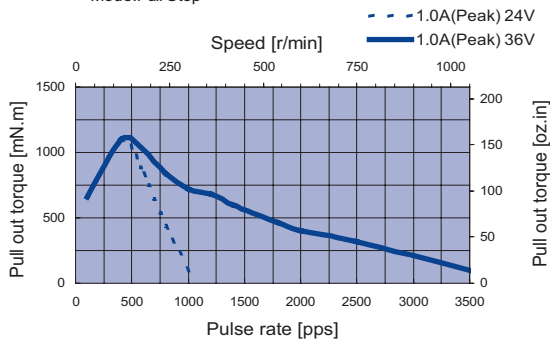
23HS3606-04

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



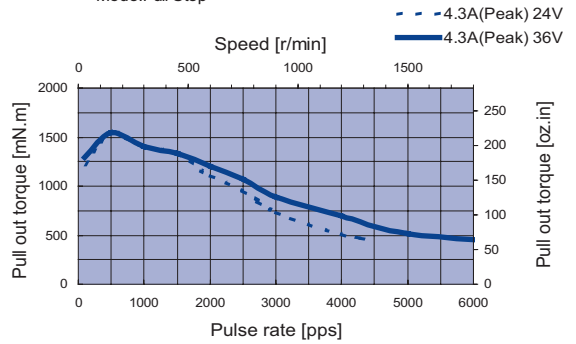
23HS3607-01

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU3040M
 Mode: Full Step



23HS5604

Conditions: Uni-polar Constant Current Driver
 IC: AMA MSU8080M
 Mode: Full Step



0.39in.
(10mm)

1.10in.
(28mm)

1.38in.
(35mm)

1.53in.
(39mm)

1.65in.
(42mm)

2.22in.
(56.4mm)

Ø2.25in.
(Ø57.2mm)

2.36in.
(60mm)

3.35in.
(85mm)

Ø3.39in.
(Ø86mm)