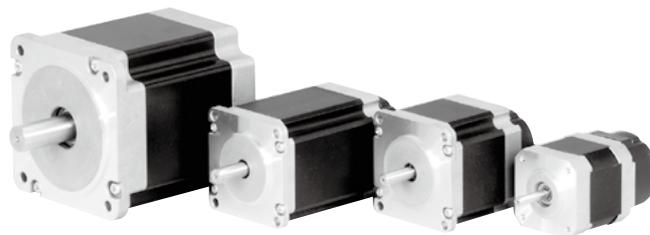


TBL-V Series ACサーボモータ AC Servo Motors



TBL-V Series ACサーボモータ AC Servo motors
(Vイ)

ステップモータの置換えに最適。

Optimal replacement for step motors

ステップモータと取付けコンパチなサーボモータ

Servo motors mechanically compatible with step motors

ステップモータと同サイズのフランジを持つTBL-Vシリーズはステップモータとの置換えができるACサーボモータです。

(メーカーによりステップモータの取り付け寸法が異なります。詳細は図面等でご確認下さい。)

The TBL-V series AC servo motors have the same flange size as that of step motors. Hence, they can be installed in replacement of such step motors.

(Note : The installation dimensions of step motors may vary by makers. Check the drawing for details.)

高信頼性レゾルバ

High-reliability resolvers

耐環境性(温度・振動・衝撃)に優れた世界最小のレゾルバ(スマートシン)、VRレゾルバ(シングルシン)を搭載しています。

The TBL-V series comes with our "Smartsyn" brushless resolver and "Singsyn" VR (Variable Reluctance)-type resolver - both the world's smallest of their kinds with superior environment-resistant characteristics.

形式

Model designation

TS □□□□ N □□□□ E □□□□

基本形式 Basic type

TS4734
TS4735
TS4737
TS4738
TS4742

センサ仕様

30:レゾルバ(スマートシン)
Sensor specifications
30 : Resolver(Smartsyn)

軸端仕様

00:丸軸(標準仕様)
01:一面フライス
Shaft end specifications
00 : Round shaft (standard)
01 : Single milled shaft

電源仕様 Power source specifications

100:AC100V
200:AC200V
500:DC24V
600:DC48V

TS □□□□ N □□□□ E □□□□

基本形式 Basic type

TS4742
TS4746
TS4747
TS4748
TS4752

センサ仕様 Sensor specifications

32:2X-VRレゾルバ(シングルシン)
33:レゾルバ(スマートシン/TS 4742除く)
32 : 2X-VR Resolver (Singsyn)
33 : Resolver(Smartsyn/Except TS4742)

軸端仕様

00:丸軸(標準仕様)
01:一面フライス
02:キー溝(TS4742除く)
Shaft end specifications
00 : Round shaft (standard)
01 : Single milled shaft
02 : Keyway (except TS4742)

電源仕様 Power source specifications

100:AC100V
200:AC200V
500:DC24V
600:DC48V

モータ特性

Motor Characteristics

| 電源電圧 Power supply voltage | | | 低電圧タイプ Low-voltage type | | | | | | |
|---|------------------|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|
| | | | DC24V(E520) | | | | | | |
| モータフランジサイズ Motor flange size | | inch | #8 | #11 | #17 | #23 | | | |
| | | mm | 20 | 28 | 42 | 56.4 | | | |
| モータ形式 Motor model | | | TS4734 | TS4735 | TS4737 | TS4738 | TS4742 | TS4746 | TS4747 |
| 定格出力 Rated output | P _R | W | 5 | 10 | 20 | 30 | 50 | 98 | 92 |
| 定格トルク Rated torque | T _R | N·m | 0.010 | 0.019 | 0.038 | 0.057 | 0.095 | 0.19 | 0.38 |
| 瞬時最大トルク Momentary max.torque | T _P | N·m | 0.029 | 0.057 | 0.115 | 0.172 | 0.29 | 0.57 | 1.15 |
| 定格等価直流機電機子電流 Rated armature current of E.D.C.M | I _R | A | 1.4 | 1.1 | 2.5 | 2.6 | 5.3 | 6.3 | 5.7 |
| 瞬時最大電流 Peak current | I _P | A(rms) | 3.2 | 3.0 | 6.5 | 7.1 | 15.2 | 17.7 | 16.5 |
| 定格回転速度 Rated rotation speed | N _R | min ⁻¹ | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 4,900 | 2,300 |
| 最高回転速度 Max. rotation speed | N _{Max} | min ⁻¹ | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 6,200 | 2,900 |
| ローターイナーシャ Rotor inertia | J _M | kg·m ² | 0.0009×10 ⁻⁴ | 0.0014×10 ⁻⁴ | 0.0064×10 ⁻⁴ | 0.0083×10 ⁻⁴ | 0.028×10 ⁻⁴ | 0.093×10 ⁻⁴ | 0.165×10 ⁻⁴ |
| 概略重量(標準タイプ) Weight (Standard type) | — | kg | 0.09 | 0.1 | 0.18 | 0.2 | 0.4 | 0.6 | 1.2 |

| 電源電圧 Power supply voltage | | | 低電圧タイプ Low-voltage type | | | | | | |
|---|------------------|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|
| | | | DC48V (E600) | | | | | | |
| モータフランジサイズ Motor flange size | | inch | #8 | #11 | #17 | #23 | | | |
| | | mm | 20 | 28 | 42 | 56.4 | | | |
| モータ形式 Motor model | | | TS4734 | TS4735 | TS4737 | TS4738 | TS4742 | TS4746 | TS4747 |
| 定格出力 Rated output | P _R | W | 5 | 10 | 20 | 30 | 50 | 100 | 200 |
| 定格トルク Rated torque | T _R | N・m | 0.010 | 0.019 | 0.038 | 0.057 | 0.095 | 0.19 | 0.38 |
| 瞬時最大トルク Momentary max.torque | T _P | N・m | 0.029 | 0.057 | 0.115 | 0.172 | 0.29 | 0.57 | 1.15 |
| 定格等価直流機電機子電流 Rated armature current of E.D.C.M | I _R | A | 1.4 | 1.1 | 2.5 | 2.6 | 5.3 | 6.3 | 5.7 |
| 瞬時最大電流 Peak current | I _P | A (rms) | 3.2 | 3.0 | 6.5 | 7.1 | 15.2 | 17.7 | 16.5 |
| 定格回転速度 Rated rotation speed | N _R | min ⁻¹ | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| 最高回転速度 Max. rotation speed | N _{Max} | min ⁻¹ | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 5,900 |
| ローターイナーシャ Rotor inertia | J _M | kg・m ² | 0.0009×10 ⁻⁴ | 0.0014×10 ⁻⁴ | 0.0064×10 ⁻⁴ | 0.0083×10 ⁻⁴ | 0.028×10 ⁻⁴ | 0.093×10 ⁻⁴ | 0.165×10 ⁻⁴ |
| 概略重量(標準タイプ) Weight (Standard Type) | — | kg | 0.09 | 0.1 | 0.18 | 0.2 | 0.4 | 0.6 | 1.2 |

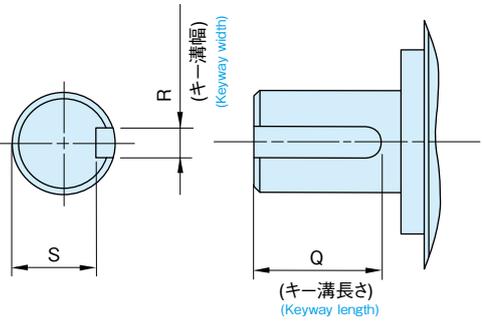
| 電源電圧 Power supply voltage | | | 高電圧タイプ High-voltage type | | | | | | | | |
|---|------------------|-------------------|--------------------------|-------------------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|
| | | | AC100V (E100) | | | | | | | | |
| モータフランジサイズ Motor flange size | | inch | #8 | #11 | #17 | #23 | #34 | | | | |
| | | mm | 20 | 28 | 42 | 56.4 | 86 | | | | |
| モータ形式 Motor model | | | TS4734 | TS4735 | TS4737 | TS4738 | TS4742 | TS4746 | TS4747 | TS4748 | TS4752 |
| 定格出力 Rated output | P _R | W | 5 | 10 | 20 | 30 | 50 | 100 | 200 | 300 | 320 |
| 定格トルク Rated torque | T _R | N・m | 0.010 | 0.019 | 0.038 | 0.057 | 0.095 | 0.19 | 0.38 | 0.57 | 0.76 |
| 瞬時最大トルク Momentary max.torque | T _P | N・m | 0.029 | 0.057 | 0.115 | 0.172 | 0.29 | 0.57 | 1.15 | 1.72 | 2.29 |
| 定格等価直流機電機子電流 Rated armature current of E.D.C.M | I _R | A | 0.7 | 0.6 | 0.9 | 0.9 | 2.4 | 3.0 | 2.8 | 2.8 | 2.9 |
| 瞬時最大電流 Peak current | I _P | A (rms) | 1.7 | 1.6 | 2.4 | 2.4 | 6.9 | 8.4 | 8.2 | 8.2 | 8.4 |
| 定格回転速度 Rated rotation speed | N _R | min ⁻¹ | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 4,000 |
| 最高回転速度 Max. rotation speed | N _{Max} | min ⁻¹ | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 4,400 |
| ローターイナーシャ Rotor inertia | J _M | kg・m ² | 0.0009×10 ⁻⁴ | 0.0014×10 ⁻⁴ | 0.0064×10 ⁻⁴ | 0.0083×10 ⁻⁴ | 0.028×10 ⁻⁴ | 0.093×10 ⁻⁴ | 0.165×10 ⁻⁴ | 0.27×10 ⁻⁴ | 1.02×10 ⁻⁴ |
| 概略重量(標準タイプ) Weight (Standard Type) | — | kg | 0.09 | 0.1 | 0.18 | 0.2 | 0.4 | 0.6 | 1.2 | 1.9 | 2.6 |

| 電源電圧 Power supply voltage | | | 高電圧タイプ High-voltage type | | | | | | | | |
|---|------------------|-------------------|--------------------------|-------------------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|
| | | | AC200V (E200) | | | | | | | | |
| モータフランジサイズ Motor flange size | | inch | #8 | #11 | #17 | #23 | #34 | | | | |
| | | mm | 20 | 28 | 42 | 56.4 | 86 | | | | |
| モータ形式 Motor model | | | TS4734 | TS4735 | TS4737 | TS4738 | TS4742 | TS4746 | TS4747 | TS4748 | TS4752 |
| 定格出力 Rated output | P _R | W | 5 | 10 | 20 | 30 | 50 | 100 | 200 | 300 | 400 |
| 定格トルク Rated torque | T _R | N・m | 0.010 | 0.019 | 0.038 | 0.057 | 0.095 | 0.19 | 0.38 | 0.57 | 0.76 |
| 瞬時最大トルク Momentary max.torque | T _P | N・m | 0.029 | 0.057 | 0.115 | 0.172 | 0.29 | 0.57 | 1.15 | 1.72 | 2.29 |
| 定格等価直流機電機子電流 Rated armature current of E.D.C.M | I _R | A | 0.7 | 0.6 | 0.9 | 0.9 | 2.4 | 3.0 | 2.8 | 2.8 | 2.9 |
| 瞬時最大電流 Peak current | I _P | A (rms) | 1.7 | 1.6 | 2.4 | 2.4 | 6.9 | 8.4 | 8.2 | 8.2 | 8.4 |
| 定格回転速度 Rated rotation speed | N _R | min ⁻¹ | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| 最高回転速度 Max. rotation speed | N _{Max} | min ⁻¹ | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 |
| ローターイナーシャ Rotor inertia | J _M | kg・m ² | 0.0009×10 ⁻⁴ | 0.0014×10 ⁻⁴ | 0.0064×10 ⁻⁴ | 0.0083×10 ⁻⁴ | 0.028×10 ⁻⁴ | 0.093×10 ⁻⁴ | 0.165×10 ⁻⁴ | 0.27×10 ⁻⁴ | 1.02×10 ⁻⁴ |
| 概略重量(標準タイプ) Weight (Standard Type) | — | kg | 0.09 | 0.1 | 0.18 | 0.2 | 0.4 | 0.6 | 1.2 | 1.9 | 2.6 |

TBL-V Series ACサーボモータ仕様 SV-NET Servo System

軸仕様 Shaft Specifications

出力軸端にキー溝付の場合 For motors with shaft keyway

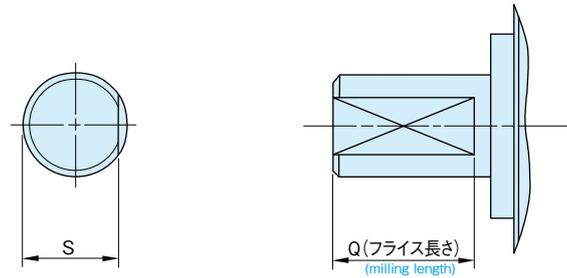


寸法 mm Dimensions : mm

| モータ形式 Motor model | Q(キー溝長さ) Q (keyway length) | S | R(キー溝幅) R (keyway width) | 付属キーサイズ Supplied key size |
|----------------------|-------------------------------|-------------|-----------------------------|------------------------------|
| TS4746 | 16 | 6.2(0,-0.2) | 3P9(-0.006,-0.031) | 3×3×16(片丸) (JIS B 1301) |
| TS4747 | | | | |
| TS4748 | | | | |
| TS4752 | 20 | 11(0,-0.2) | 5P9(-0.012,-0.042) | 5×5×20(片丸) (JIS B 1301) |

※ #17(□42)サイズ以下は対応していません。 Small size is not supported from #17(□42)

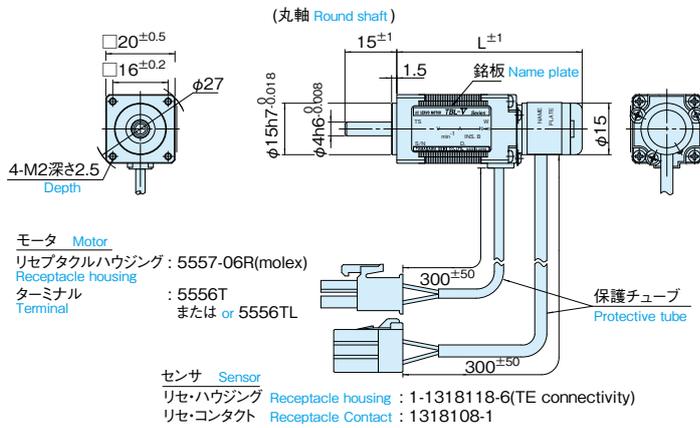
出力軸端が一面フライスの場合 For motors with Single milled shaft



| モータ形式 Motor model | Q(フライス長さ) Q (milling length) | S |
|----------------------|---------------------------------|------------|
| TS4734/TS4735 | 10 | 3.5(±0.2) |
| TS4737/TS4738 | 15 | 4.5(±0.2) |
| TS4742 | 15 | 4.5(±0.15) |
| TS4746/TS4747/TS4748 | 15 | 7.5(±0.2) |
| TS4752 | 25 | 13(±0.2) |

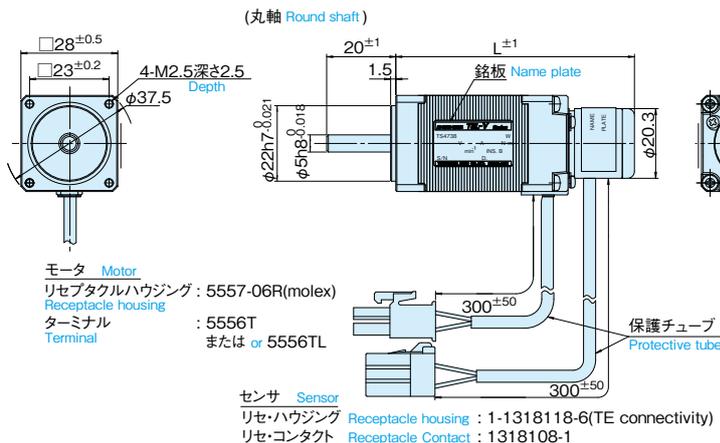
外形図 Outline

#8 □20(5W、10W)



| 定格出力 Rated Output | 5W | 10W |
|----------------------|--------|--------|
| 形式 Model | TS4734 | TS4735 |
| L(mm) | 43.6 | 53.6 |

#11 □28(20W、30W)

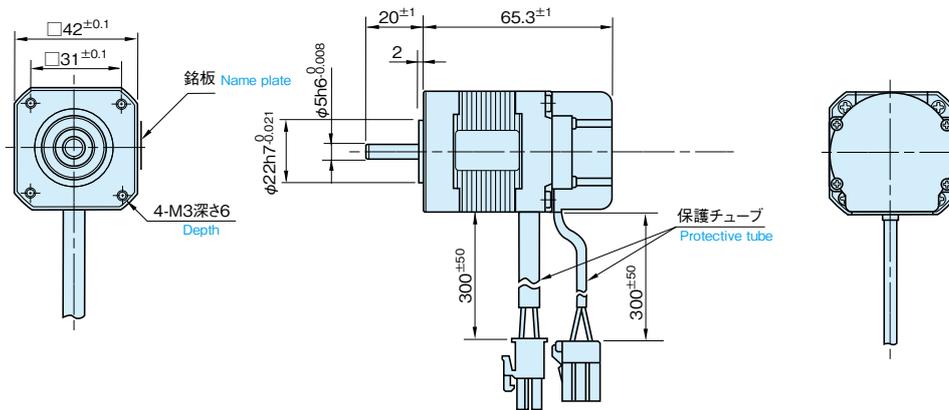


| 定格出力 Rated Output | 20W | 30W |
|----------------------|--------|--------|
| 形式 Model | TS4737 | TS4738 |
| L(mm) | 59.0 | 69.0 |

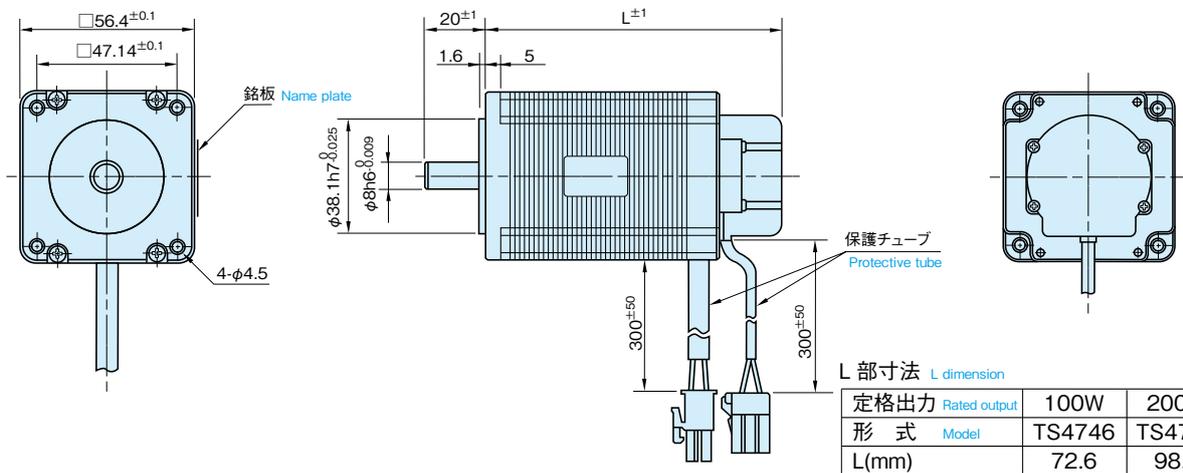
TBL-V Series ACサーボモータ 外形図 Outline

#17 □42(50W)

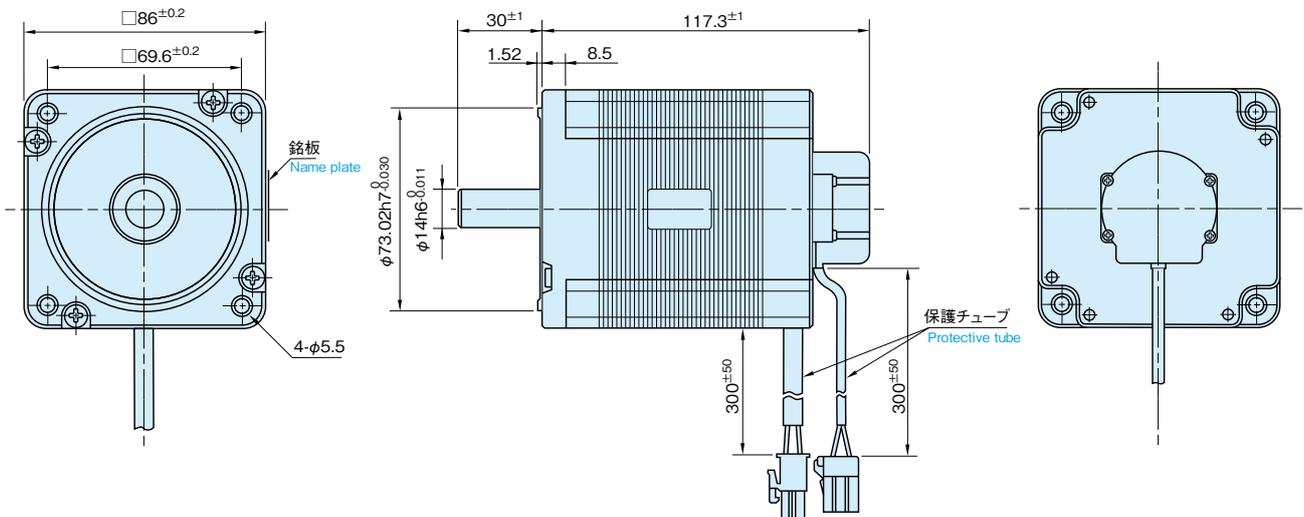
(単位: mm)
(Unit: mm)



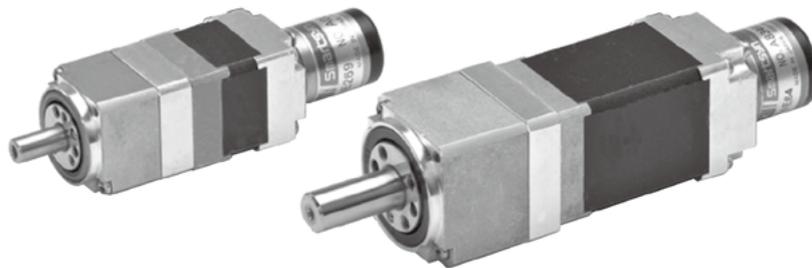
#23 □56.4(100W,200W,300W)



#34 □86(400W)



TBL-V Series 減速機付ACサーボモータ AC Servo Motors



TBL-V Series ACサーボモータ AC Servo motors
(ワイ)

減速機搭載

Reduction gear

ハーモニック減速機直結 Equipped with a Harmonic Drive® reducer

小型ノンバックラッシュハーモニック減速機を直結したコンパクトな高出力サーボモータ。

A compact and high-power servo motor combined with a small non-backlash Harmonic reducer.

高信頼性レゾルバ

High reliable resolver

耐環境性(温度、振動、衝撃)に優れた世界最小レゾルバ(Smartsyn)搭載。

Equipped with the world's smallest resolver (Smartsyn) excellent in environment resistance (temperature, vibration, shock, etc.)

個別仕様

Specifications

| モータ部(減速機入力) Specifications of motors<Gear input> | | | | | | | 減速機 Specifications of gear | | | | | | | |
|--|------|-------------|---------------|--------------------------|--|----------------------|----------------------------|------------|------------------------|--------------------------|------------------------|---------------------------|--------------------------|--------------------------|
| モータフランジ Motor mount flange | | 形式 Model | 出力※ Output | 定格 回転数 Rated speed | 定格電流/最大電流 Rated current / Max current | | 取付フランジ Mounting flange | | 減速比 Reduction ratio | 定格 回転数 Rated speed | 最大 回転数 Max speed | 定格 トルク Rated torque | 最大 トルク Peak torque | 減速機 単体質量 Gear mass |
| [inch] | [mm] | | | | [W] | [min ⁻¹] | DC24,48V | AC100,200V | | | | | | |
| #8 | □20 | TS4734 | 5 | 5,000 | 1.4/3.2 | 0.7/1.7 | #8 | □20.4 | 1/30 | 167 | 267 | 0.089 | 0.61 | 0.03 |
| | | | | | 1.4/3.2 | 0.7/1.7 | | | 1/50 | 100 | 160 | 0.21 | 1.1 | 0.03 |
| | | | | | 1.4/3.2 | 0.7/1.7 | | | 1/100 | 50 | 80 | 0.53 | 2.3 | 0.03 |
| | | TS4735 | 10 | 5,000 | 1.1/2.1 | 0.6/1.1 | | | 1/30 | 167 | 267 | 0.35 | 0.90 | 0.03 |
| | | | | | 1.0/2.3 | 0.5/1.2 | | | 1/50 | 100 | 160 | 0.53 | 1.8 | 0.03 |
| | | | | | 0.9/1.8 | 0.5/0.9 | | | 1/100 | 50 | 80 | 0.94 | 2.7 | 0.03 |
| #11 | □28 | TS4737 | 20 | 5,000 | 2.7/6.9 | 0.9/2.4 | #11 | □30 | 1/30 | 167 | 267 | 0.63 | 2.7 | 0.12 |
| | | | | | 2.7/6.9 | 0.9/2.4 | | | 1/50 | 100 | 160 | 1.2 | 4.7 | 0.12 |
| | | | | | 2.7/6.5 | 0.9/2.3 | | | 1/100 | 50 | 80 | 2.6 | 9.0 | 0.12 |
| | | TS4738 | 30 | 5,000 | 2.6/5.7 | 0.9/2.0 | | | 1/30 | 167 | 267 | 1.2 | 3.3 | 0.12 |
| | | | | | 2.6/6.4 | 0.9/2.2 | | | 1/50 | 100 | 160 | 2.1 | 6.6 | 0.12 |
| | | | | | 2.2/4.5 | 0.7/1.6 | | | 1/100 | 50 | 80 | 3.3 | 9.0 | 0.12 |

※減速機により制限されます。 The output is limited with reduction gear.

形式

Model designation

TS □ □ □ □ N □ □ □ □ E □ □ □ □

モータ出力 Motor Type
TS4734: 5W
TS4735: 10W
TS4737: 20W
TS4738: 30W

センサ仕様 Sensor specifications
30:レゾルバ(スマートシン)
Resolver (Smartsyn)

減速比 Gear ratio
11:1/30
12:1/50
13:1/100

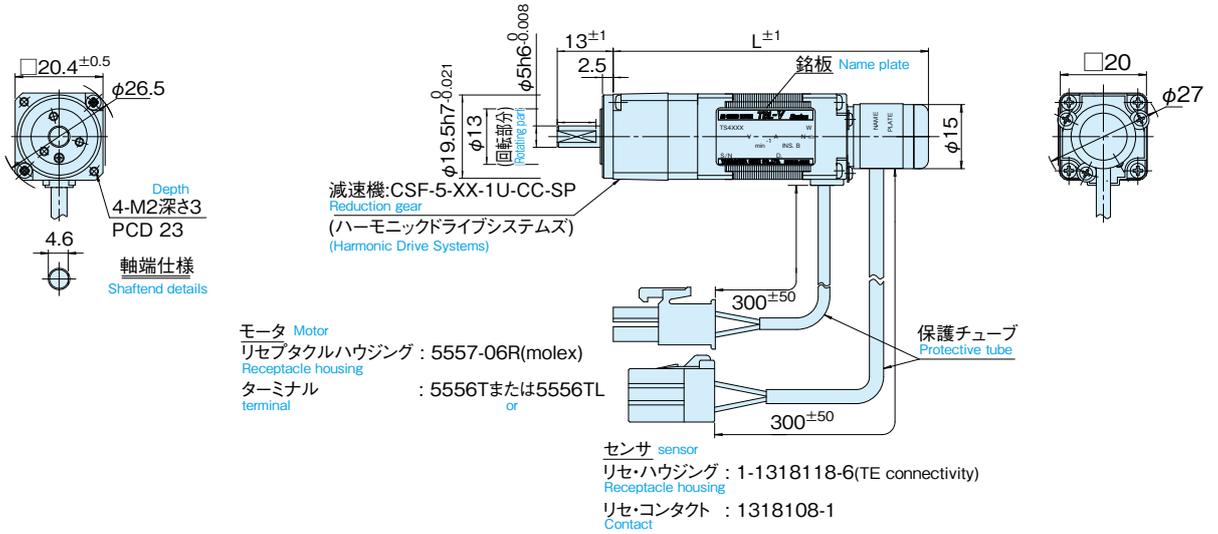
電源 Power Supply
100:AC100V
200:AC200V
500:DC24V
600:DC48V

TBL-V Series 減速機付ACサーボモータ

TBL-V Series 減速機付ACサーボモータ外形図 Outline

#8 □20(50W,10W)

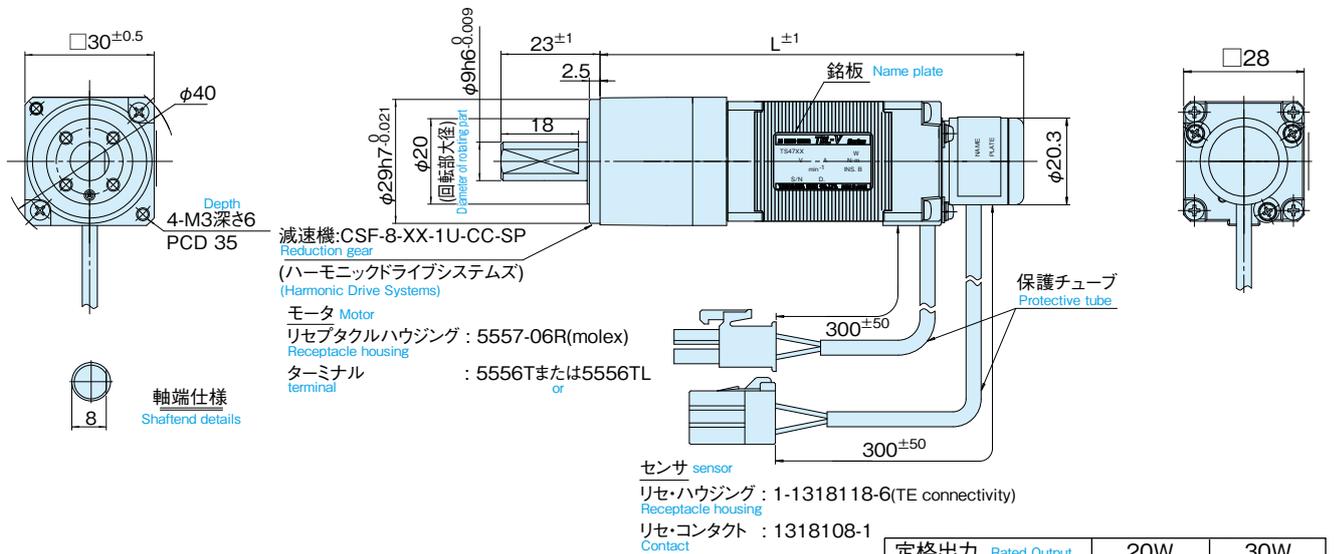
(一面フライス Single milled shaft)



| | | |
|-------------------|--------|--------|
| 定格出力 Rated Output | 5W | 10W |
| 形式 Model | TS4734 | TS4735 |
| L(mm) | 63.2 | 73.2 |

#11 □28(20W,30W)

(一面フライス Single milled shaft)



| | | |
|-------------------|--------|--------|
| 定格出力 Rated Output | 20W | 30W |
| 形式 Model | TS4737 | TS4738 |
| L(mm) | 88.4 | 98.4 |

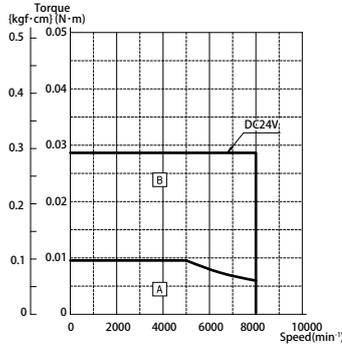
TBL-V Series ACサーボモータ 回転数トルク特性 (N-T特性)
Torque characteristic diagrams (N-T Characteristics)



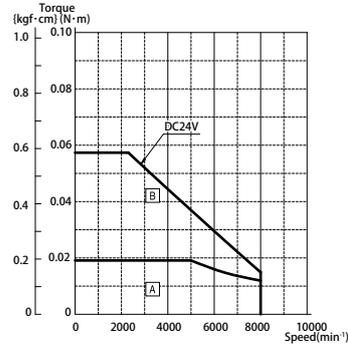
DC24V 用 E500

A: 連続領域 A: Continuous operation area
B: 加減速領域 B: Acceleration / deceleration area

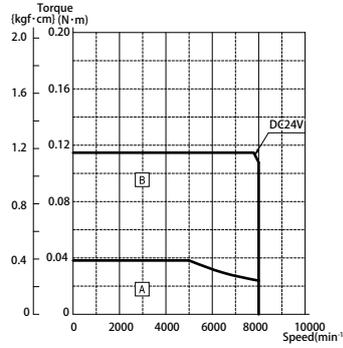
TS4734 N30□□ E500(5W)



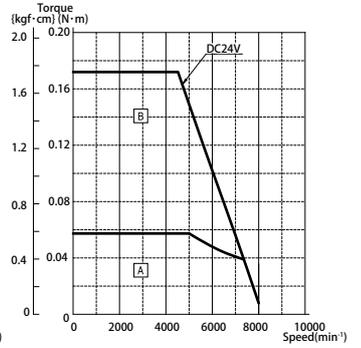
TS4735 N30□□ E500(10W)



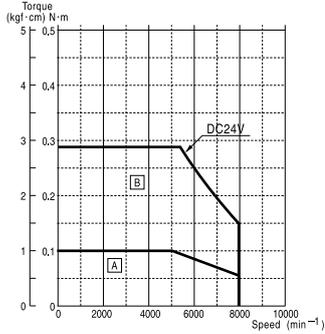
TS4737 N30□□ E500(20W)



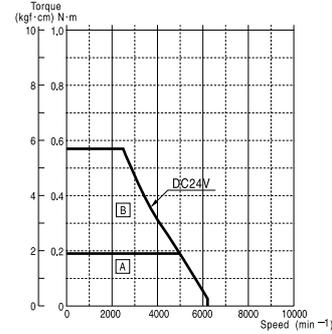
TS4738 N30□□ E500(30W)



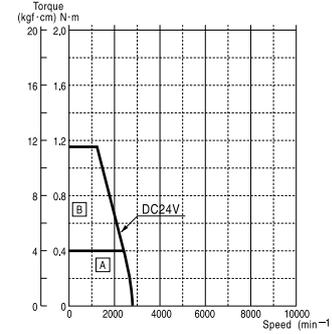
TS4742 N32□□ E500(50W)



TS4746 N32□□ E500(98W)



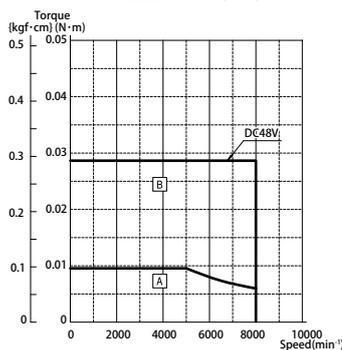
TS4747 N32□□ E500(92W)



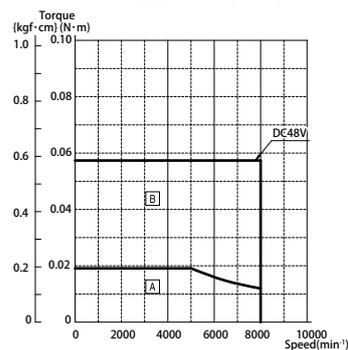
DC48V 用 E600

A: 連続領域 A: Continuous operation area
B: 加減速領域 B: Acceleration / deceleration area

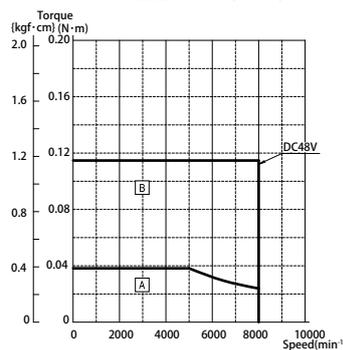
TS4734 N30□□ E600(5W)



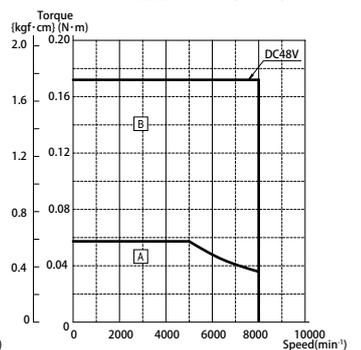
TS4735 N30□□ E600(10W)



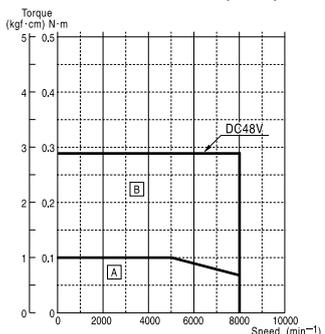
TS4737 N30□□ E600(20W)



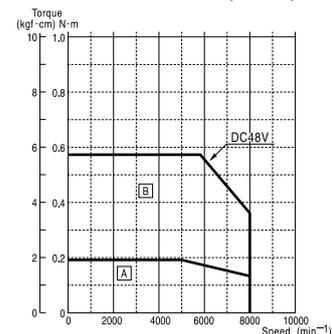
TS4738 N30□□ E600(30W)



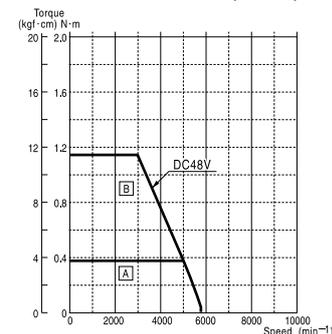
TS4742 N32□□ E600(50W)



TS4746 N32□□ E600(100W)



TS4747 N32□□ E600(200W)



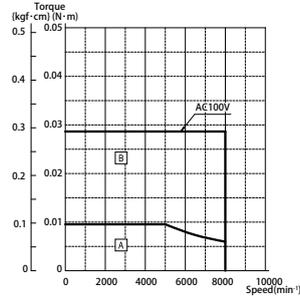
TBL-V Series ACサーボモータ 回転数トルク特性 (N-T特性)

TBL-V Series

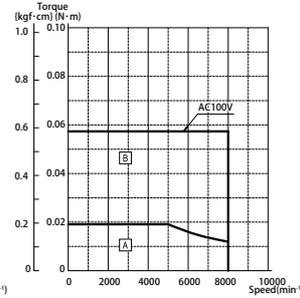
AC100V用 E100

A: 連続領域 A: Continuous operation area
B: 加減速領域 B: Acceleration / deceleration area

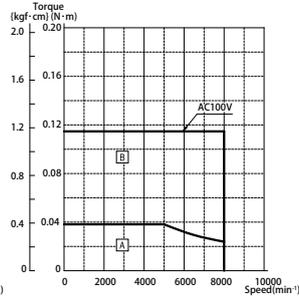
TS4734 N30□□ E100(5W)



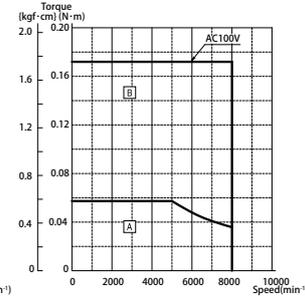
TS4735 N30□□ E100(10W)



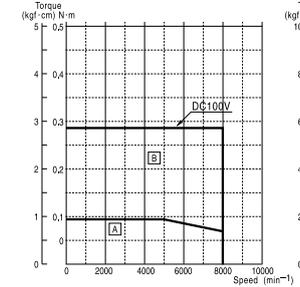
TS4737 N30□□ E100(20W)



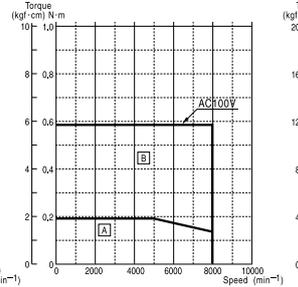
TS4738 N30□□ E100(30W)



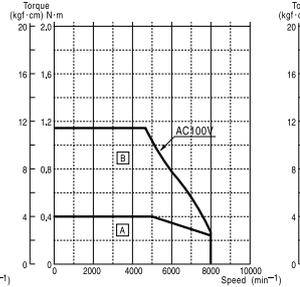
TS4742 N32□□ E100(50W)



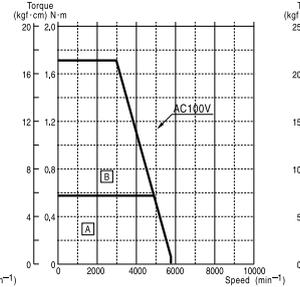
TS4746 N32□□ E100(100W)



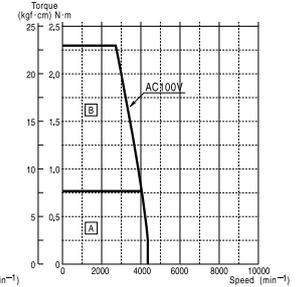
TS4747 N32□□ E100(200W)



TS4748 N32□□ E100(300W)



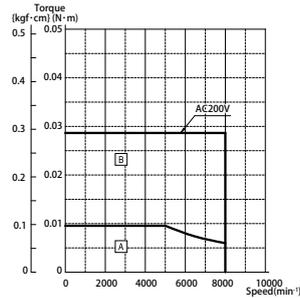
TS4752 N32□□ E100(320W)



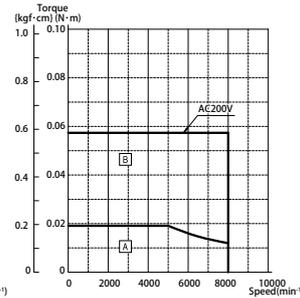
AC200V用 E200

A: 連続領域 A: Continuous operation area
B: 加減速領域 B: Acceleration / deceleration area

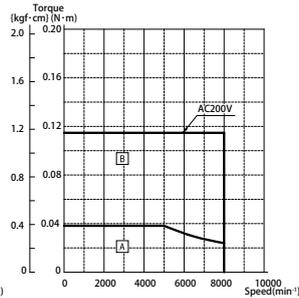
TS4734 N30□□ E200(5W)



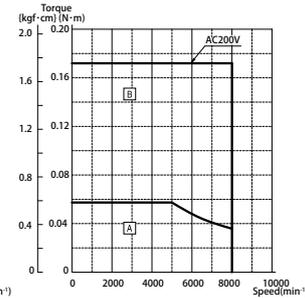
TS4735 N30□□ E200(10W)



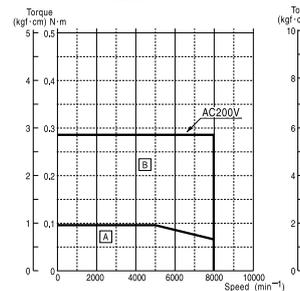
TS4737 N30□□ E200(20W)



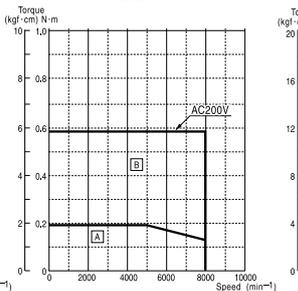
TS4738 N30□□ E200(30W)



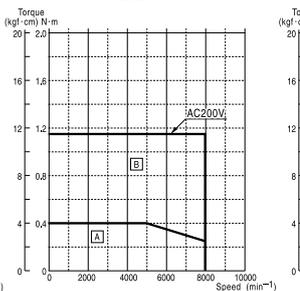
TS4742 N32□□ E200(50W)



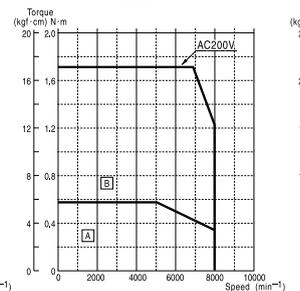
TS4746 N32□□ E200(100W)



TS4747 N32□□ E200(200W)



TS4748 N32□□ E200(300W)



TS4752 N32□□ E200(400W)

