



**MOTOR SERIES**

**MT0**

**Uni-Directional Synchronous Motor - 375 RPM**

**Application**

Timers, Chart recorders, Potentiometer Drives, light Displays, Hour Meters, Cam Timers, Programming devices and control instrumentation.

**Design**

MT0 is a unidirectional motor with a cylindrical sheet-iron stator in which the field poles form the stator ring. In combination with the auxiliary poles (provided with copper shading rings) a rotating field is generated when the coil is energized.

The rotor turns in sintered bushings requiring no maintenance. The motor shaft is polished to a mirror finish. Motor can be provided with screw clip for fixing.

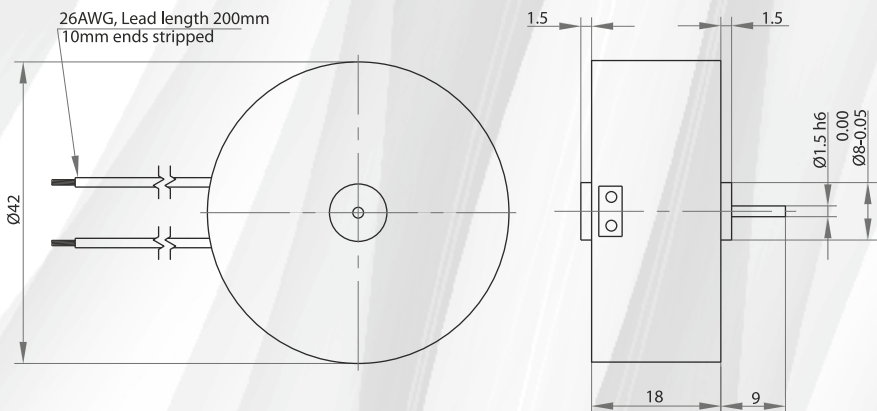
**Standard Data**

Motor type		Uni directional synchronous; with electrical shading
Ambient temperature operation	°C	-15...+55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	105
Electrical Enclosure	IP	40
Connections		Flexible Leads 26 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Mounting		any position
HVT		As per standard IEC60034-1
Weight	g	100
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Hardened steel, ground and polished
Bearings		Sintered bronze, self-lubricating
External dimensions		dia. 42 x 18 mm

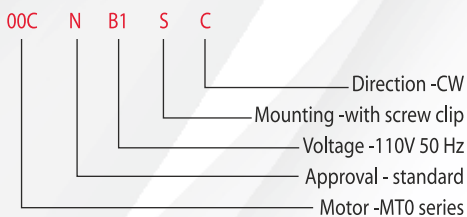
**Technical data**

Standard Motor Voltages	V	12, 24, 110, 230 ..... (others on request)	
Tolerance of voltage	%	-10....+15% of rated voltage	
Duty cycle	%	100	
<b>Rated frequency</b>	<b>Hz</b>	<b>50</b>	<b>60</b>
Power output at rated voltage	W	0.08	0.07
Speed	rpm	375	450
Running torque at rated voltage	Ncm	0.20	0.16
Power consumption at rated voltage	W	1.4	1.5

**Dimensional Drawing**



**Ordering Data (eg.)**





**MOTOR SERIES**

**MT6B**

**Uni-Directional Synchronous Motor - 500 RPM**

**Application**

Instrumentation, diamond machinery, peristaltic pumps, motorised displays, programming devices, cam timers, medical equipment, valves and actuators.

**Design**

MT6b is a unidirectional synchronous motor. The direction of the motor is either cw or ccw which is fixed with help of reversing stopper while manufacturing. This non reversing device also guarantees at all times starting in the desired direction with high starting torque. The motor consists of a cylindrical sheet iron stator which form the poles.

Mounted on the hardened and highly polished rotor shaft is a high coercivity sintered magnet ring around whose circumference 12 poles of alternate polarity are disposed. Special version of motor without the non reversing device is also available. In this case the motor can start in any direction. Motor can be provided with screw or snap clip for fixing.

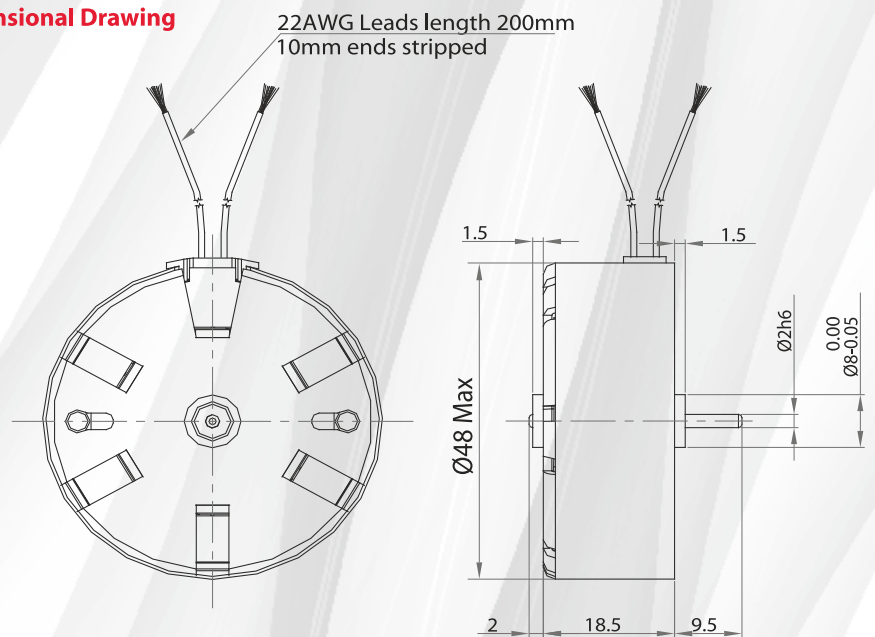
**Standard Data**

Motor type		Uni directional synchronous; with mechanical anti return device
Ambient temperature operation	°C	-15...+55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	105
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Mounting		any position
HVT		As per standard IEC60034-1
Weight	g	100
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Hardened steel, ground and polished
Bearings		Polymer
External dimensions		dia. 48 x 18.5 mm

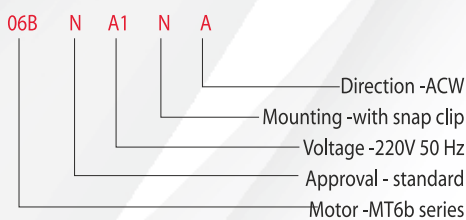
**Technical data**

Standard Motor Voltages	V	12, 24, 110, 230 ..... (others on request)	
Tolerance of voltage	%	-10...+15% of rated voltage	
Duty cycle	%	100	
<b>Rated frequency</b>	<b>Hz</b>	<b>50</b>	<b>60</b>
Power output at rated voltage	W	0.77	0.87
Speed	rpm	500	600
Running torque at rated voltage	Ncm	0.9	0.8
Power consumption at rated voltage	W	2.4	1.8

**Dimensional Drawing**



**Ordering Data (eg.)**





**MOTOR SERIES**

**MTR2b**

**Reversible Synchronous Motor - 500 RPM**

**Application**

Recorders, Instrumentation, Diamond machinery, Valve Actuators, Light displays, Medical equipment, Air conditioning & refrigeration, Dosing Pumps, Vending machines CCTV Camera positioning, any timing and positioning Application.

**Design**

MTR2b reversing synchronous motor is of the permanent magnet type with two stator windings, for single phase AC 50/60 Hz. Phase displacement of the excitation current is achieved by connecting a capacitor in parallel with one of the stator windings. The sense of rotation is determined by the resulting circular rotating field. Electrical reversal of the sense of rotation is effected by means of a single-pole changeover switch. The 12 pole rotor which has a steel shaft polished to a mirror-finish rotates in sintered bronze bearings. Motor can be provided with Mounting plate.

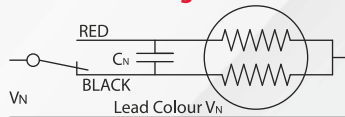
**Standard Data**

Motor type		Reversible synchronous
Ambient temperature operation	°C	-15...+ 55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	105
Electrical Enclosure	IP	40
Connections		Flexible Leads 30AWG, 200mm length; ends stripped 10 mm
Sense of rotation		Indicated by lead colour (red-CW & black ACW)
Life expectancy		3 Years in continuous operation
Mounting		Any position
HVT		As per standard IEC60034-1
Weight	g	30
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Hardened steel, ground & polished
Bearings		Sintered bronze, self lubricating
External dimensions		dia 20.4 x 17 mm

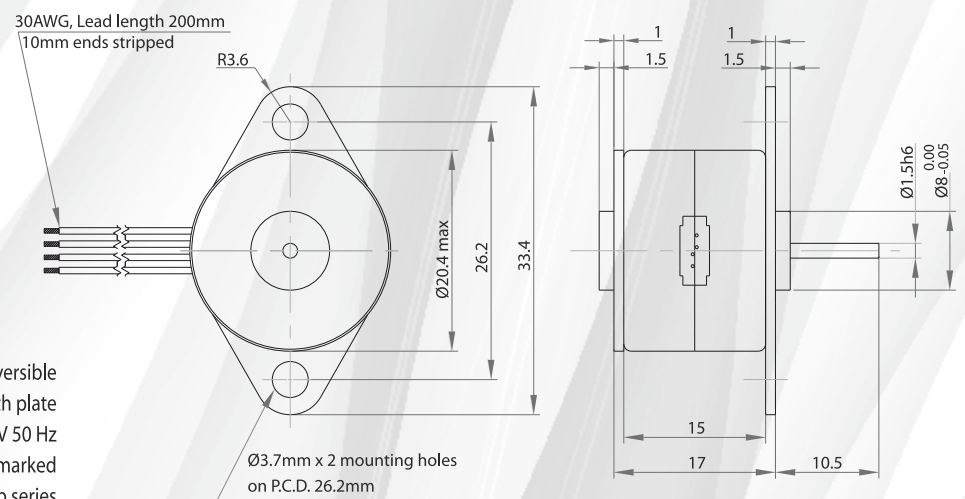
**Technical data**

Standard Motor Voltages (V <sub>N</sub> )	V	12	24
Operation capacitor (50 Hz) C <sub>N</sub>	µF/VAC	10/20	2.2/40
Operation capacitor (60 Hz) C <sub>N</sub>	µF/VAC	10/20	2.2/40
Lead colour (V <sub>N</sub> )		Grey	Blue
Tolerance of Voltage	%	-10... +15% of rated voltage	
Duty Cycle	%	100	
<b>Rated Frequency</b>	<b>Hz</b>	<b>50</b>	<b>60</b>
Power output at rated voltage	W	0.08	0.085
Speed	Rpm	500	600
Running Torque at rated voltage	Ncm	0.15	0.14
Power Consumption at rated voltage	W	1	1
Detent Torque	Ncm	0.12	

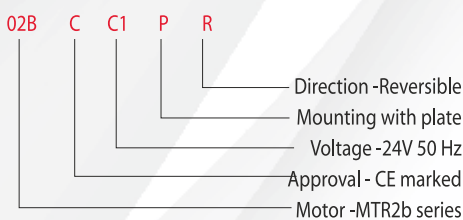
**Connection Diagram**



**Dimensional Drawing**



**Ordering Data (eg.)**





## MOTOR SERIES

### MTR3a

## Reversible Synchronous Motor - 250 RPM

#### Application

Recorders, Instrumentation, Diamond machinery, Valve Actuators, Light displays, Textile machinery, Medical equipments, Air conditioning & refrigeration, Dampers, Peristaltic Pumps, Dosing Pumps, Vending machines, CCTV Camera positioning, any timing and positioning Application.

#### Design

MTR3a reversing synchronous motor is of the permanent magnet type with two stator windings, for single phase AC 50/60 Hz. Phase displacement of the excitation current is achieved by connecting a capacitor in parallel with one of the stator windings. The sense of rotation is determined by the resulting circular rotating field. Electrical reversal of the sense of rotation is effected by means of a single-pole changeover switch.

The 24 pole rotor which has a steel shaft polished to a mirror-finish rotates in sintered bronze bearings.

Motor can be provided with mounting plate / screw clip for fixing.

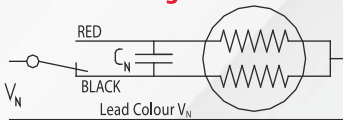
#### Standard Data

Motor type		Reversible synchronous
Ambient temperature operation	°C	-15...+55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	105
Electrical Enclosure	IP	40
Connections		Flexible Leads 26 AWG, 200mm length; ends stripped 10 mm
Sense of rotation		Indicated by lead colour (red-CW & black ACW)
Life expectancy		3 Years in continuous operation
Mounting		any position
HVT		As per standard IEC60034-1
Weight	g	65
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Hardened steel, ground and polished
Bearings		Sintered bronze, self-lubricating
External dimensions		dia. 36 x 21.5 mm

#### Technical data

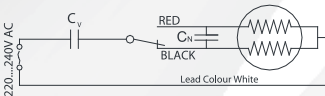
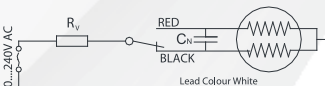
Standard Motor Voltages(V <sub>N</sub> )	V	12	24	48	110	230*
Operation capacitor(50 Hz)C <sub>N</sub>	µF/VAC	10/ 20	3.3/ 50	0.82/ 100	0.15/ 200	With add on units
Operation capacitor (60Hz) C <sub>N</sub>	µF/VAC	10/ 20	3.3/ 50	0.82/ 100	0.15/ 200	
Lead colour (V <sub>N</sub> )		Grey	Blue	Brown	White	White
Tolerance of voltage	%	-10...+15% of rated voltage				
Duty cycle	%	100				
<b>Rated frequency</b>	<b>Hz</b>	<b>50</b>				<b>60</b>
Power output at rated voltage	W	0.2				0.25
Speed	Rpm	250				300
Running torque at rated voltage	Ncm	0.8				0.8
Power consumption at rated voltage	W	1.5				1.5
Detent Torque	Ncm	0.19				

#### Connection Diagram



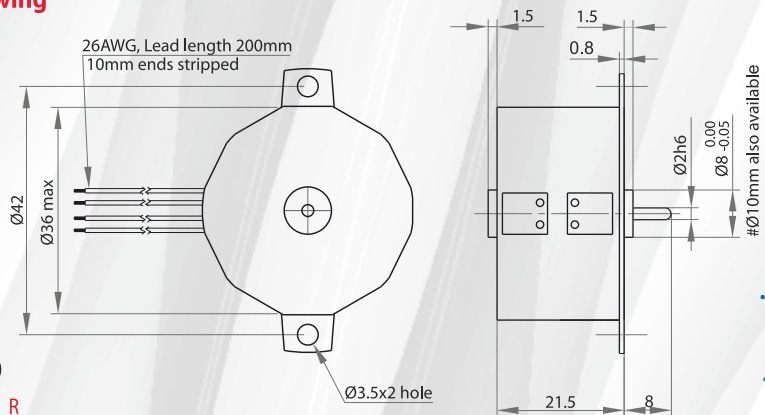
#### Add on units for 220\* & 240\* V

220.....240 V (V<sub>N</sub> motor 110V)

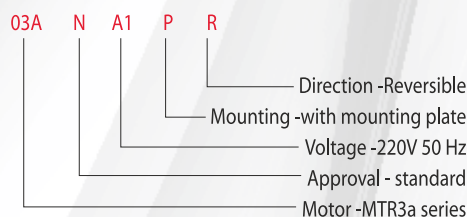


Unit	220V	240V
R <sub>V</sub> (1.5W) 50/60Hz	8.2 KΩ	10 KΩ
C <sub>V</sub> (200 VAC) 50Hz	0.18 µF	0.15 µF
C <sub>V</sub> (200 VAC) 60Hz	0.15 µF	0.12 µF

#### Dimensional Drawing



#### Ordering Data (eg.)





## MOTOR SERIES

### MTR3b

## Reversible Synchronous Motor - 500 RPM

#### Application

Recorders, Instrumentation, Diamond machinery, Valve Actuators, Light displays, Textile machinery, Medical equipment, Air conditioning & refrigeration, Dampers, Peristaltic Pumps, Dosing Pumps, Vending machines CCTV Camera positioning, any timing and positioning Application.

#### Design

MTR3b reversing synchronous motor is of the permanent magnet type with two stator windings, for single phase AC 50/60 Hz. Phase displacement of the excitation current is achieved by connecting a capacitor in parallel with one of the stator windings. The sense of rotation is determined by the resulting circular rotating field. Electrical reversal of the sense of rotation is effected by means of a single-pole changeover switch.

The 12 pole rotor which has a steel shaft polished to a mirror-finish rotates in sintered bronze bearings.

Motor can be provided with Mounting plate/Screw clip for fixing.

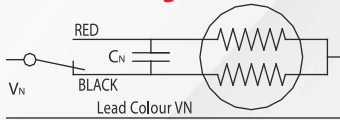
#### Standard Data

Motor type		Reversible synchronous
Ambient temperature operation	°C	-15...+55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	105
Electrical Enclosure	IP	40
Connections		Flexible Leads 26 AWG, 200mm length; ends stripped 10 mm
Sense of rotation		Indicated by lead colour (red-CW & black ACW)
Life expectancy		3 Years in continuous operation
Mounting		any position
HVT		As per standard IEC60034-1
Weight	g	65
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Hardened steel, ground and polished
Bearings		Sintered bronze, self-lubricating
External dimensions		dia. 36 x 21.5 mm

#### Technical data

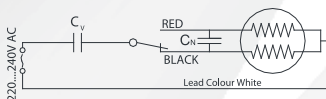
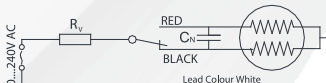
Standard Motor Voltages(V <sub>N</sub> )	V	12	24	48	110	230*
Operation capacitor(50 Hz)C <sub>N</sub>	µF/VAC	15/ 20	3.9/ 50	1.0/ 100	0.22/ 200	With add on units
Operation capacitor (60Hz) C <sub>N</sub>	µF/VAC	15/ 20	3.9/ 50	1.0/ 100	0.22/ 200	
Lead colour (V <sub>N</sub> )		Grey	Blue	Brown	White	White
Tolerance of voltage	%	-10...+15% of rated voltage				
Duty cycle	%	100				
<b>Rated frequency</b>	<b>Hz</b>	<b>50</b>				<b>60</b>
Power output at rated voltage	W	0.39				0.45
Speed	Rpm	500				600
Running torque at rated voltage	Ncm	0.65				0.6
Power consumption at rated voltage	W	1.5				1.5
Detent Torque	Ncm	0.25				

#### Connection Diagram



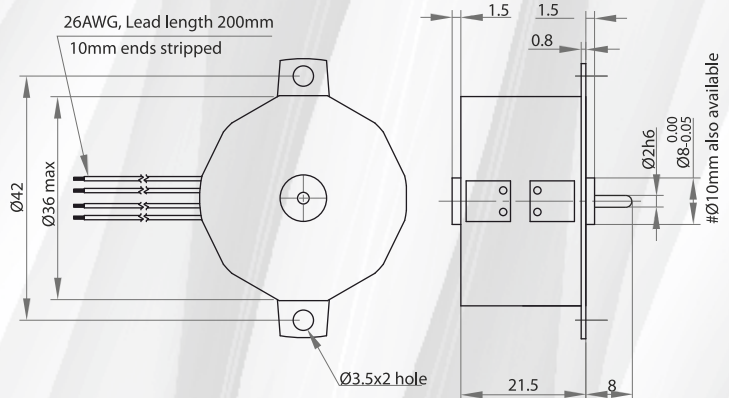
#### Add on units for 230\* V

220....240 V (V<sub>N</sub> motor 110V)

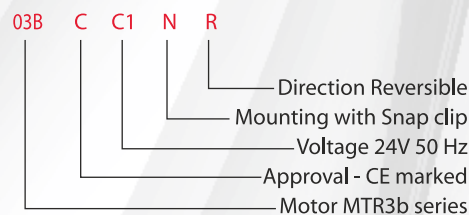


Unit	220V	240V
R <sub>V</sub> (1.5W) 50/60Hz	10 K Ω	10 K Ω
C <sub>V</sub> (200 VAC) 50 Hz	0.22 µF	0.22 µF
C <sub>V</sub> (200 VAC) 60 Hz	0.18 µF	0.18 µF

#### Dimensional Drawing



#### Ordering Data (eg.)





**MOTOR SERIES**

**MTR5**

**Reversible Synchronous Motor - 500 RPM**

**Application**

Recorders, Instrumentation, Diamond machinery, Valve Actuators, Light displays, Textile machinery, Medical equipment, Air conditioning & refrigeration, Dampers, Peristaltic Pumps, Dosing Pumps, Vending machines CCTV Camera positioning, any timing and positioning Application.

**Design**

MTR5 reversing synchronous motor is of the permanent magnet type with two stator windings, for single phase AC 50/60 Hz. Phase displacement of the excitation current is achieved by connecting a capacitor in parallel with one of the stator windings. The sense of rotation is determined by the resulting circular rotating field. Electrical reversal of the sense of rotation is effected by means of a single-pole changeover switch. The 12 pole rotor which has a steel shaft polished to a mirror-finish rotates in sintered bronze bearings.

Motor can be provided with Mounting plate/Screw clip for fixing.

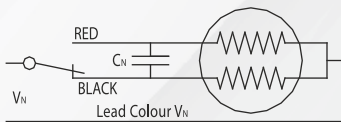
**Standard Data**

Motor type		Reversible synchronous
Ambient temperature operation	°C	-15...+55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	105
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Sense of rotation		Indicated by lead colour (red-CW & black ACW)
Life expectancy		3 Years in continuous operation
Mounting		any position
HVT		As per standard IEC60034-1
Weight	g	140
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Hardened steel, ground and polished
Bearings		Sintered bronze, self-lubricating
External dimensions		dia. 48 x 25 mm

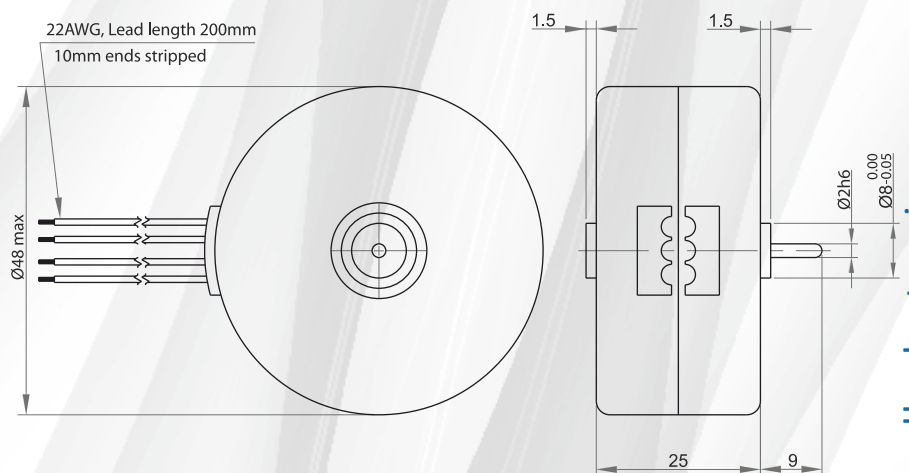
**Technical data**

Standard Motor Voltage (V <sub>N</sub> )	V	12	24	48	110	230
Operation capacitor (50 Hz)C <sub>N</sub>	µF/VAC	22/20	6.8/40	1.5/100	0.27/200	0.068/400
Operation capacitor (60 Hz)C <sub>N</sub>	µF/VAC	22/20	6.8/40	1.5/100	0.27/200	0.068/400
Lead colour (V <sub>N</sub> )		Grey	Blue	Brown	White	Yellow
Tolerance of voltage	%	-10... +15% of rated voltage				
Duty cycle	%	100				
Rated frequency	Hz	50			60	
Power output at rated voltage	W	0.7			0.78	
Speed	Rpm	500			600	
Running torque at rated voltage	Ncm	1.35			1.25	
Power consumption at rated voltage	W	2.1			2.2	
Detent torque	Ncm	0.35				

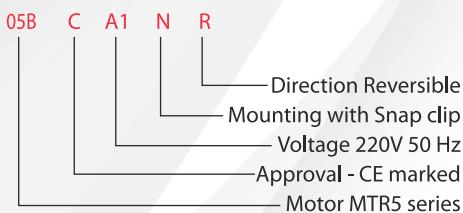
**Connection Diagram**



**Dimensional Drawing**



**Ordering Data (eg.)**





**MOTOR SERIES**

**MTR4a**

**Reversible Synchronous Motor - 250 RPM**

**Application**

Valve Actuators, Light displays, Textile machinery, Medical equipment, Air conditioning & refrigeration, Dampers peristaltic Pumps, Dosing pumps, Vending machines, CCTV Camera positioning, any positioning Application.

**Design**

MTR4a reversing synchronous motor is of the permanent magnet type with two stator windings, for single phase AC 50/60 Hz. Phase displacement of the excitation current is achieved by connecting a capacitor in parallel with one of the stator windings. The sense of rotation is determined by the resulting circular rotating field. Electrical reversal of the sense of rotation is effected by means of a single-pole changeover switch.

The 24 pole rotor which has a steel shaft polished to a mirror-finish rotates in sintered bronze bearings.

Motor can be provided with Mounting plate/Screw clip for fixing.

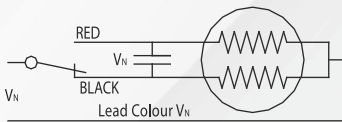
**Standard Data**

Motor type		Reversible synchronous
Ambient temperature operation	°C	-15...+55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	105
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Sense of rotation		Indicated by lead colour (red-CW & black ACW)
Life expectancy		3 Years in continuous operation
Mounting		any position
HVT		As per standard IEC60034-1
Weight	g	200
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Hardened steel, ground and polished
Bearings		Sintered bronze, self-lubricating, (Ball bearing on request)
External dimensions		dia. 51.5 x 28.5 mm

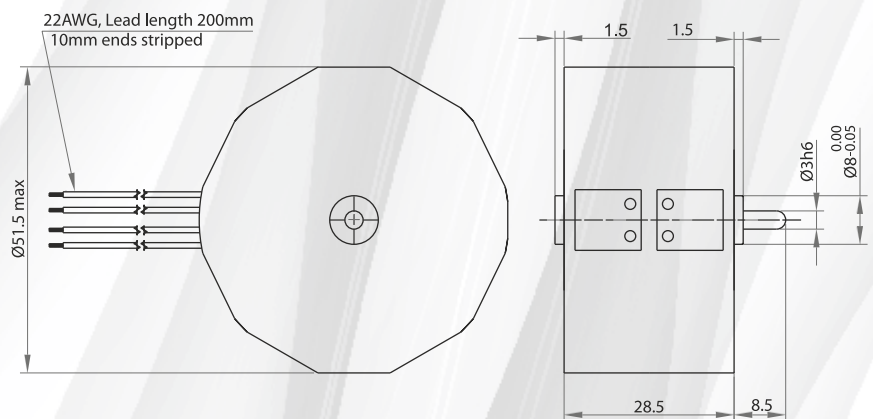
**Technical data**

Standard Motor Voltages (V <sub>N</sub> )	V	24	48	110	230
Operation capacitor(50 Hz) C <sub>N</sub>	µF/VAC	10/50	2.2/100	0.39/250	0.1/400
Operation capacitor (60Hz) C <sub>N</sub>	µF/VAC	8.2/50	1.8/100	0.33/250	0.082/400
Lead colour (V <sub>N</sub> )		Blue	Brown	White	Yellow
Tolerance of voltage	%	-10...+15% of rated voltage			
Duty cycle	%	100			
<b>Rated frequency</b>	<b>Hz</b>	<b>50</b>		<b>60</b>	
Power output at rated voltage	W	0.94		1.03	
Speed	Rpm	250		300	
Running torque at rated voltage	Ncm	3.6		3.3	
Power consumption at rated voltage	W	4		3.2	
Detent Torque	Ncm	0.45			

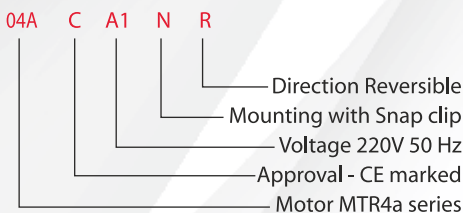
**Connection Diagram**



**Dimensional Drawing**



**Ordering Data** (eg.)





**MOTOR SERIES**

**MTS2b**

**Stepper Motor 15°**

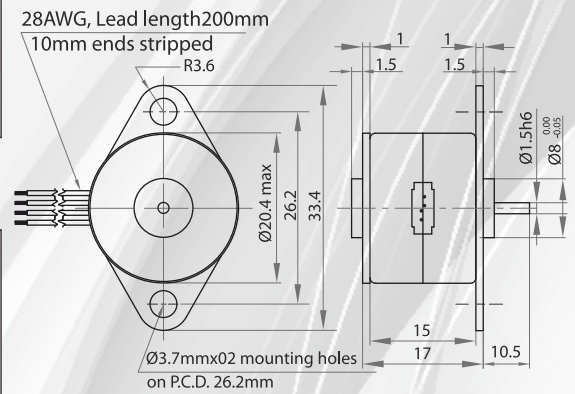
**Standard Data**

Motor type		Permanent Magnet (PM) Stepper Motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 30 AWG, 200mm length; ends stripped 10 mm
Life Expectancy		3 Years in Continuous Operation
Weight	g	30
Mounting		any position by ears

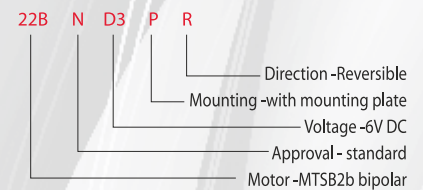
**Technical Data**

Steps per Revolution		24			
Degree / Step		15			
Winding Type		bipolar			
Standard Voltage	V	6	12	24	
Resistace per Winding	Ω	27	125	500	
Winding Type		unipolar			
Standard Voltage	V	6	12	24	
Resistace per Winding	Ω	35	150	600	
Winding Temperature	°C	105 max			
Holding Torque	Ncm	0.4	(MTSB2b)	0.3	(MTSU2b)
Axial Force	N	1			
Lateral Force	N	0.8			
Rotor inertia	gcm <sup>2</sup>	0.3			

**Dimensional Drawing**

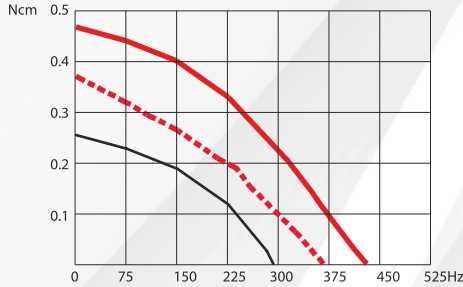


**Ordering Data (eg.)**

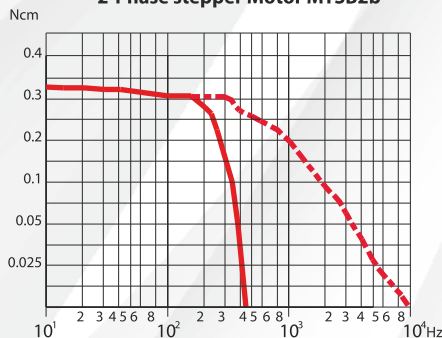


**Torque Graphs**

**Start range (pull-in) with constant voltage power stage**

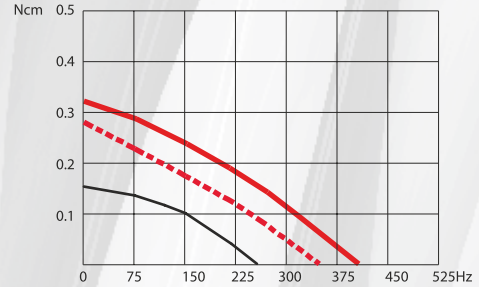


**2-Phase stepper Motor MTSB2b**

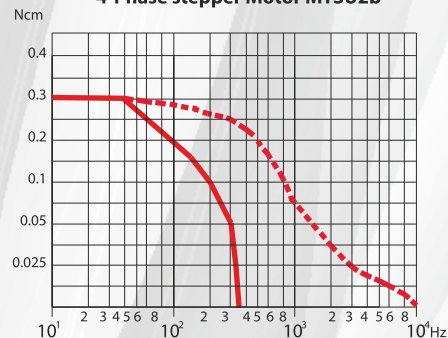


**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**

**Start range (pull-in) with constant voltage power stage**



**4-Phase stepper Motor MTSU2b**



**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**





**MOTOR SERIES**

**MTS3a**

**Stepper Motor 7.5°**

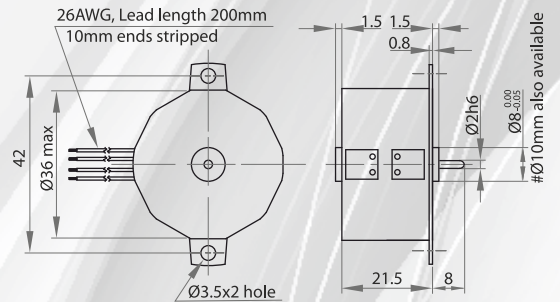
**Standard Data**

Motor type		Permanent Magnet (PM) stepper motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 26 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Weight	g	65
Mounting		Any position by ears or screw clip

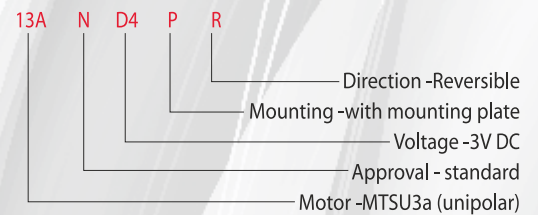
**Technical Data**

Steps per revolution		48			
Degree/step		7.5			
Winding Type		bipolar			
Standard Voltage	V	3	6	12	24
Resistance per winding	Ω	11.5	18.5	100	460
Winding Type		unipolar			
Standard Voltage	V	3	6	12	24
Resistance per winding	Ω	12	28.5	120	500
Winding temperature	°C	105 max.			
Holding torque	Ncm	1.6	(MTSB3a)	1.2	(MTSU3a)
Axial Force	N	1			
Lateral Force	N	3			
Rotor inertia	gcm <sup>2</sup>	2.9			

**Dimensional Drawing**

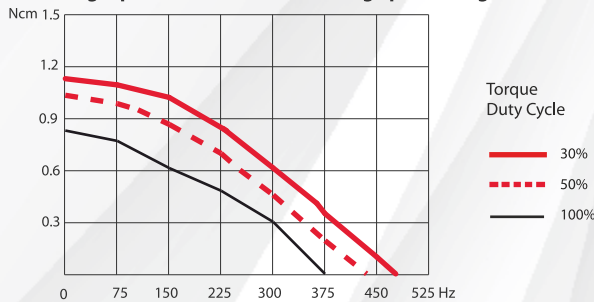


**Ordering Data (eg.)**

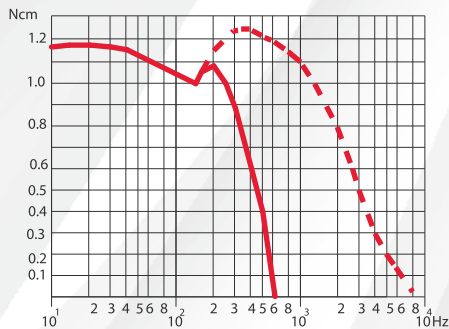


**Torque Graphs**

**Start range (pull-in) with constant voltage power stage**

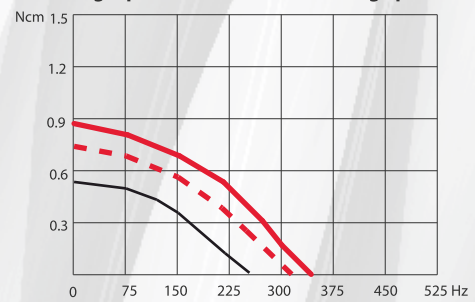


**2-Phase stepper Motor MTSB3a**

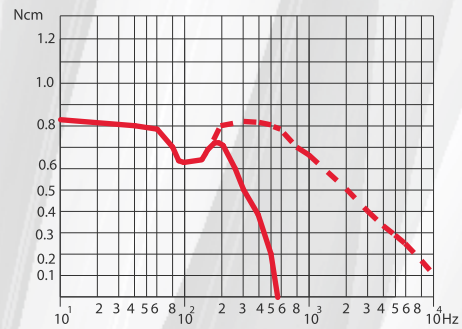


**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**

**Start range (pull-in) with constant voltage power stage**



**4-Phase Stepper Motor MTSU3a**



**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**



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**MOTOR SERIES**

**MTS3b**

**Stepper Motor 15°**

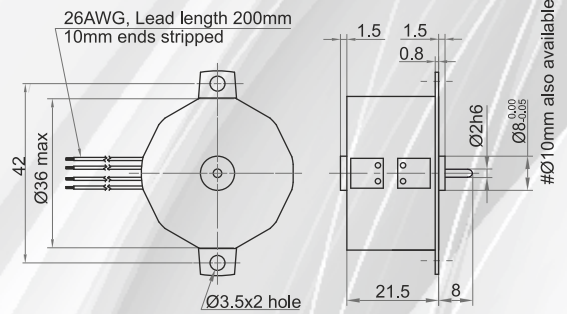
**Standard Data**

Motor type		Permanent Magnet (PM) stepper motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 26 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Weight	g	65
Mounting		Any position by ears or screw clip

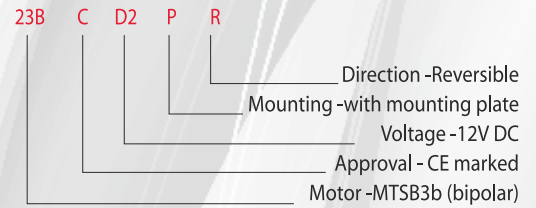
**Technical Data**

Steps per revolution		24			
Degree/step		15			
Winding Type		bipolar			
Standard Voltage	V	3	6	12	24
Resistance per winding	Ω	11.5	18.5	100	460
Winding Type		unipolar			
Standard Voltage	V	3	6	12	24
Resistance per winding	Ω	12	28.5	120	500
Winding temperature	°C	105 max.			
Holding torque	Ncm	1.4	(MTSB3b)	1	(MTSU3b)
Axial Force	N	1			
Lateral Force	N	3			
Rotor inertia	gcm <sup>2</sup>	2.9			

**Dimensional Drawing**

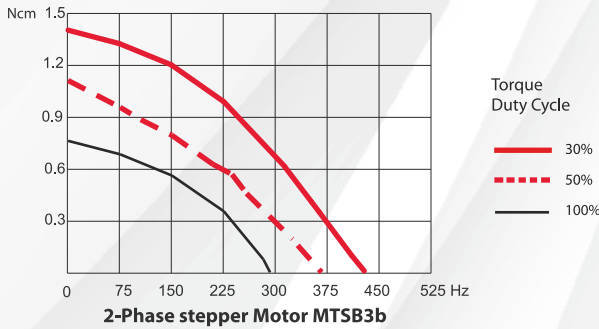


**Ordering Data** (eg.)

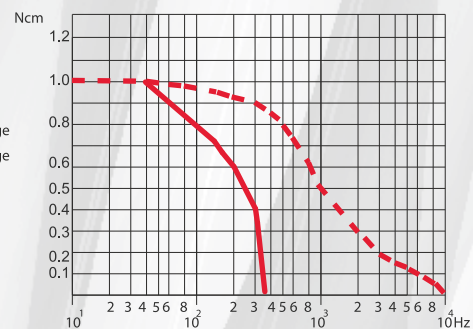
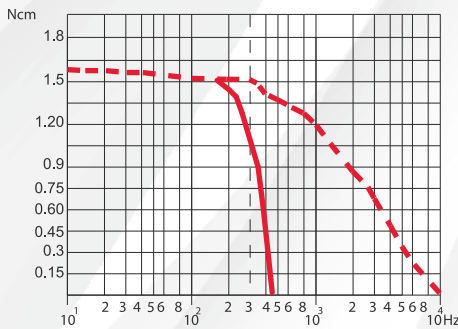
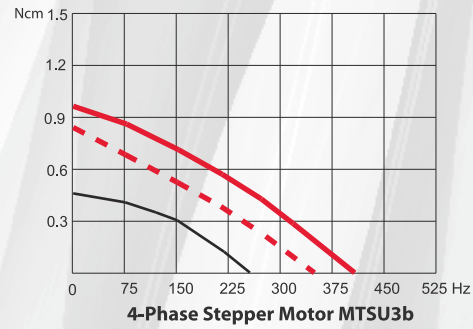


**Torque Graphs**

**Start range (pull-in) with constant voltage power stage**



**Start range (pull-in) with constant voltage power stage**



**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**

**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**



**MOTOR SERIES**

**MTS5**

**Stepper Motor 15°**

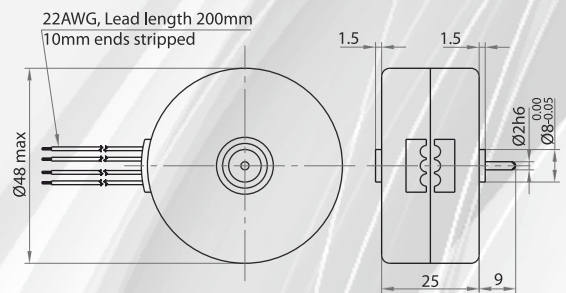
**Standard Data**

Motor type		Permanent Magnet (PM) stepper motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Weight	g	140
Mounting		Any position by ears or screw clip

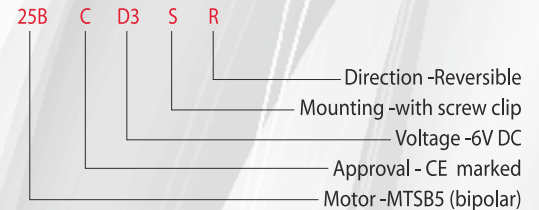
**Technical Data**

Steps per revolution		24		
Degree/step		15		
Winding Type		bipolar		
Standard Voltage	V	6	12	24
Resistance per winding	Ω	15	78	300
Winding Type		unipolar		
Standard Voltage	V	6	12	24
Resistance per winding	Ω	20	78	300
Winding temperature	°C	105 max.		
Holding torque	Ncm	2.5	(MTSB5)	2.1 (MTSU5)
Axial Force	N	2		
Lateral Force	N	4		
Rotor inertia	gcm <sup>2</sup>	6		

**Dimensional Drawing**

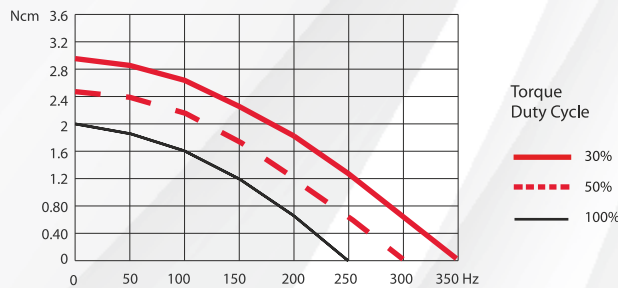


**Ordering Data (eg.)**

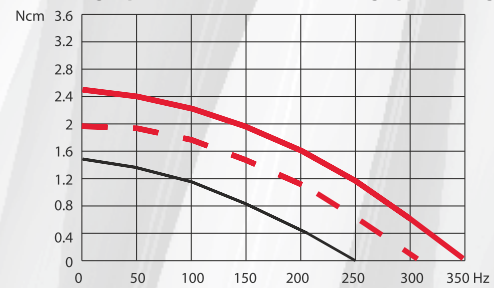


**Torque Graphs**

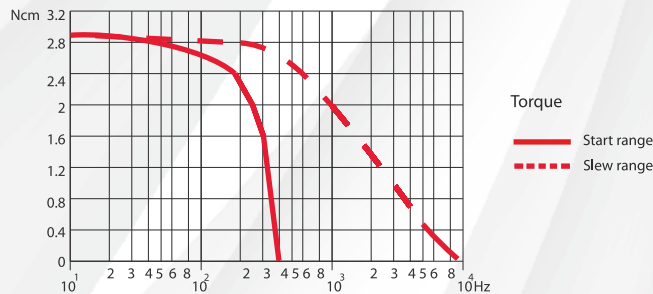
**Start range (pull-in) with constant voltage power stage**



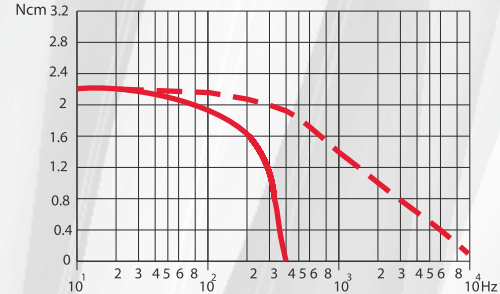
**Start range (pull-in) with constant voltage power stage**



**2-Phase stepper Motor MTSB5**



**4-Phase Stepper Motor MTSU5**



**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**

**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**



**MOTOR SERIES**

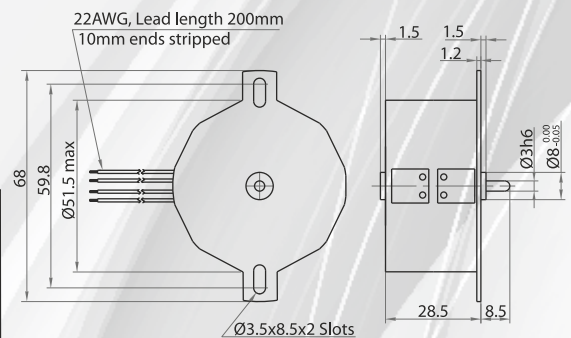
**MTS4a**

**Stepper Motor 7.5°**

**Standard Data**

Motor type		Permanent Magnet (PM) stepper motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Weight	g	200
Mounting		Any position by ears or screw clip

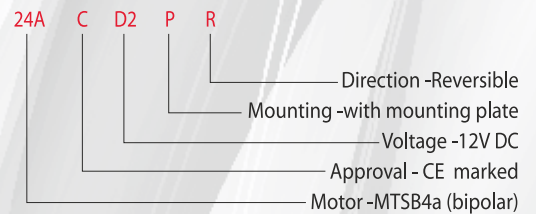
**Dimensional Drawing**



**Technical Data**

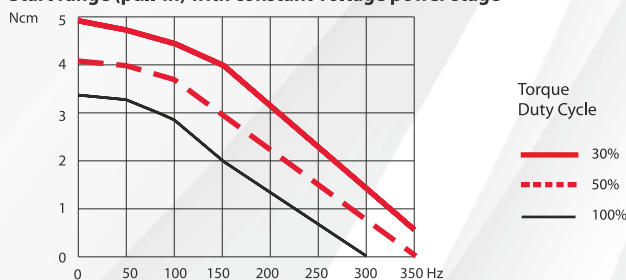
Steps per revolution		48		
Degree/step		7.5		
Winding Type		bipolar		
Standard Voltage	V	6	12	24
Resistance per winding	Ω	9.5	61	251
Winding Type		unipolar		
Standard Voltage	V	6	12	24
Resistance per winding	Ω	15	61	251
Winding temperature	°C	105 max.		
Holding torque	Ncm	6.2	(MTSB4a)	4.5 (MTSU4a)
Axial Force	N	3		
Lateral Force	N	6		
Rotor inertia	gcm <sup>2</sup>	6		

**Ordering Data (eg.)**

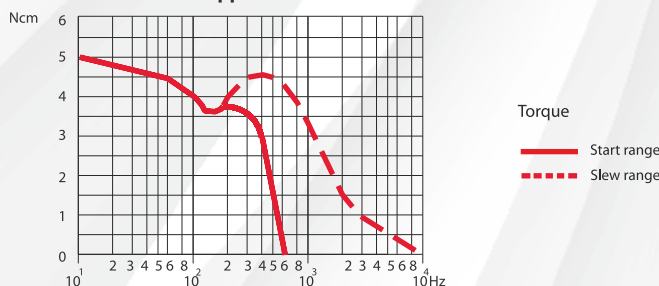


**Torque Graphs**

**Start range (pull-in) with constant voltage power stage**

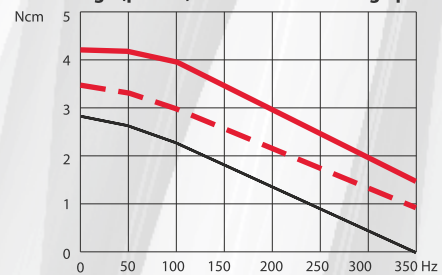


**2-Phase stepper Motor MTSB4a**

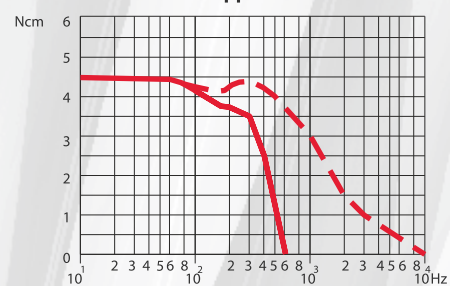


**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**

**Start range (pull-in) with constant voltage power stage**



**4-Phase Stepper Motor MTSU4a**



**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**



**MOTOR SERIES**

**MTS4b**

**Stepper Motor 15°**

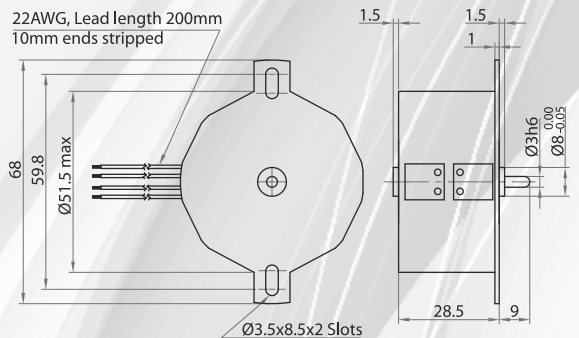
**Standard Data**

Motor type		Permanent Magnet (PM) stepper motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Weight	g	200
Mounting		Any position by ears or screw clip

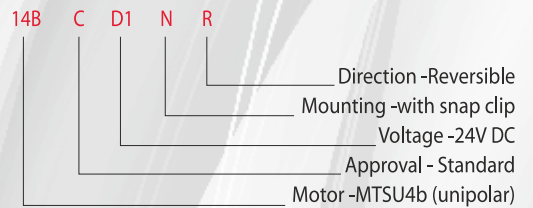
**Technical Data**

Steps per revolution		24		
Degree/step		15		
Winding Type		bipolar		
Standard Voltage	V	6	12	24
Resistance per winding	Ω	9.5	61	251
Winding Type		unipolar		
Standard Voltage	V	6	12	24
Resistance per winding	Ω	15	61	251
Winding temperature	°C	105 max.		
Holding torque	Ncm	5.2	(MTSB4b)	4 (MTSU4b)
Axial Force	N	3		
Lateral Force	N	6		
Rotor inertia	gcm <sup>2</sup>	13		

**Dimensional Drawing**

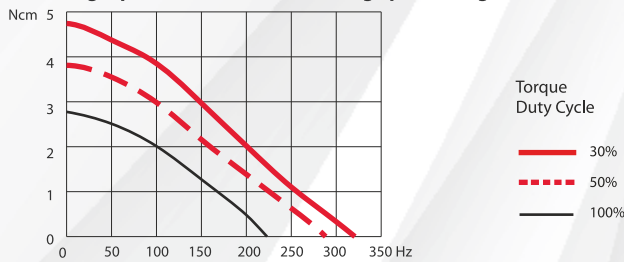


**Ordering Data (eg.)**

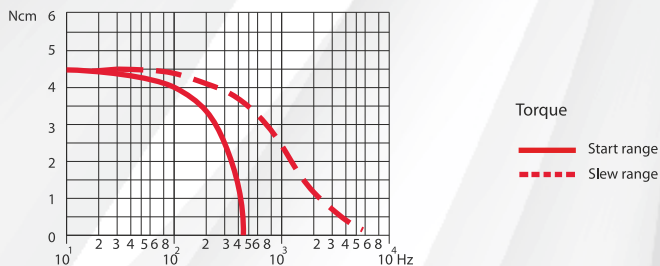


**Torque Graphs**

**Start range (pull-in) with constant voltage power stage**

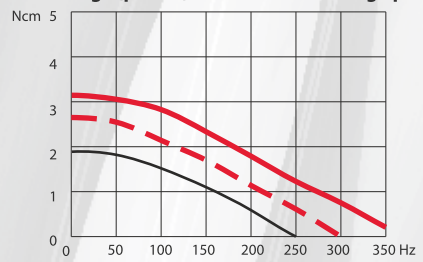


**2-Phase stepper Motor MTSB4b**

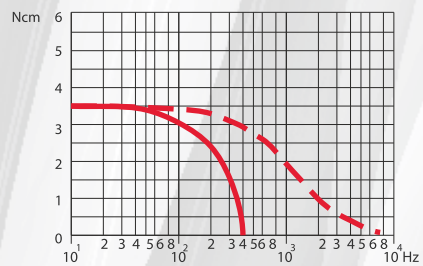


**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**

**Start range (pull-in) with constant voltage power stage**



**4-Phase Stepper Motor MTSU4b**



**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**



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**MOTOR SERIES**

**MTSD4b**

**Stepper Motor 15°**

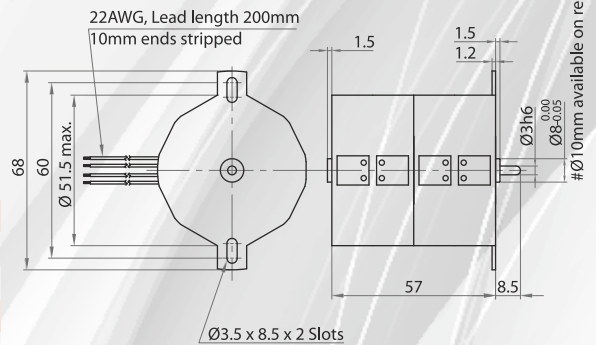
**Standard Data**

Motor type		Permanent Magnet (PM) stepper motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Life expectancy		3 years in continuous operation
Weight	g	400
Mounting		Any position by ears or screw clip

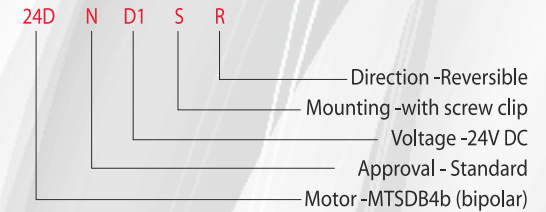
**Technical Data**

Steps per revolution		24
Degree/step		15
Winding Type		bipolar
Standard Voltage	V	6 12 24
Resistance per winding	Ω	5 26 122
Winding Type		unipolar
Standard Voltage	V	6 12 24
Resistance per winding	Ω	8 30 122
Winding temperature	°C	105 max.
Holding torque	Ncm	10 (MTSDB4b) 7.2 (MTSDU4b)
Axial Force	N	3
Lateral Force	N	6
Rotor inertia	gcm <sup>2</sup>	26

**Dimensional Drawing**

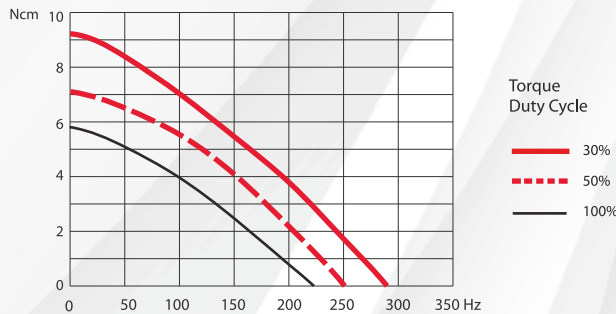


**Ordering Data (eg.)**

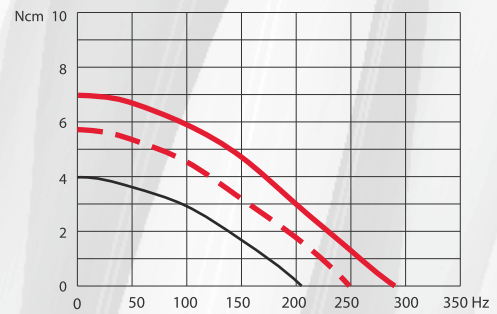


**Torque Graphs**

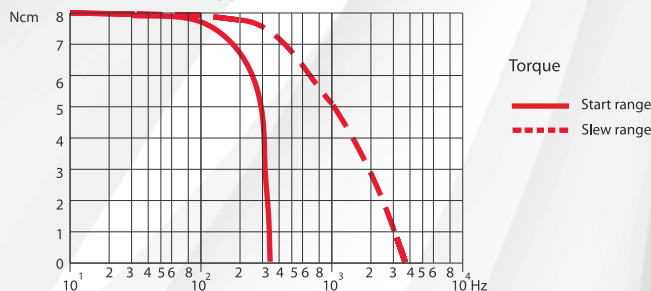
**Start range (pull-in) with constant voltage power stage**



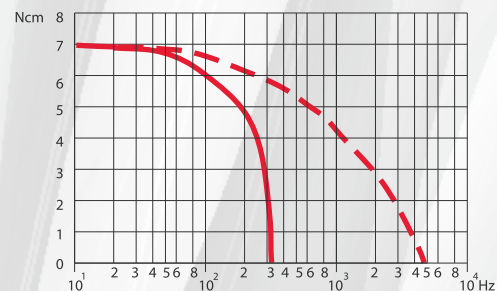
**Start range (pull-in) with constant voltage power stage**



**2-Phase stepper Motor MTSDB4b**



**4-Phase Stepper Motor MTSDU4b**



**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**

**Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)**



**GEAR SERIES**

**GB2**

**Spur Reduction Gearhead - 0.3 Nm**

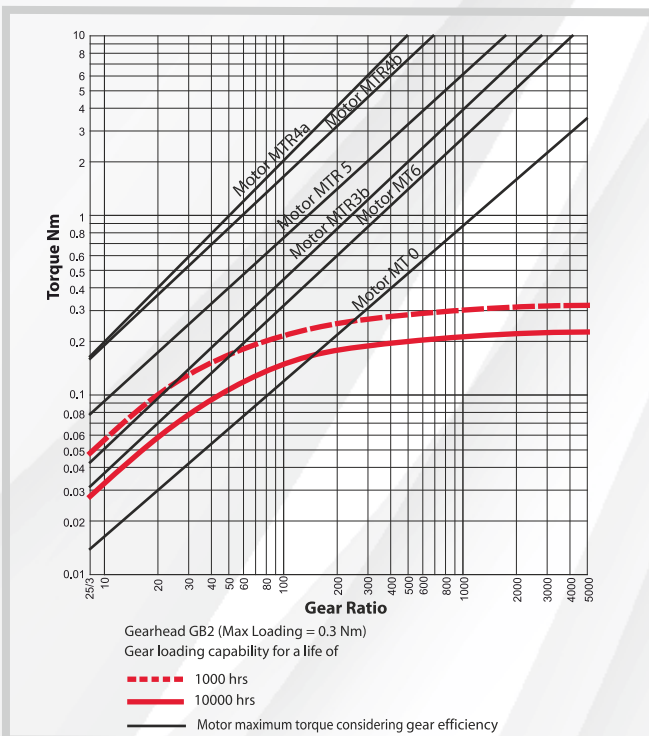
**Design**

In GB2 gearhead ,spur gears rotate on hardness steel spindles which are polished to a mirror finish. In order to damp running noise at slow running times and low motor loads,the initial spur gears after the rotor shaft are made of injection moulded poly acetal.The spur gears close to the output shaft on the other hand,are made of metal.The output shaft is mounted in two special brass bushes. The entire gear train is put between metal plates with a plastic frame. It is permanently lubricated and therefore requires no maintenance.Thicker shaft (Ø6-7mm) mounted in robust bushing (Ø12) are available in new variant (GB2S). Single- way or two way slipping clutches can also be installed to enable the output shaft to be rotated while the motor is stationary. GB2 can also be combined with small DC Motors. To achieve higher gear torque, GB2 can be mounted on GB4.

**Technical Data**

Gear Type		Spur
Gear Torque	Nm	0.3
Combination with Mechtex motors		Motor MT0, MT6, MTR/S3a/3b,MTR/S-5 and small DC motors
Mounting		any position
Weight	g	60
Axial thrust	N	20
Lateral force	N	50
Radial torque	Nm	0.5
Slipping clutches/free wheel		single left/right
Slipping clutches/friction 2 way	Nm	0.05
Output bearing		Sintered bronze sleeve bushings
Output shafts	Ø	3.175,4.00,4.76,5.00,6.00 & 7..00 (others on request)
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	40

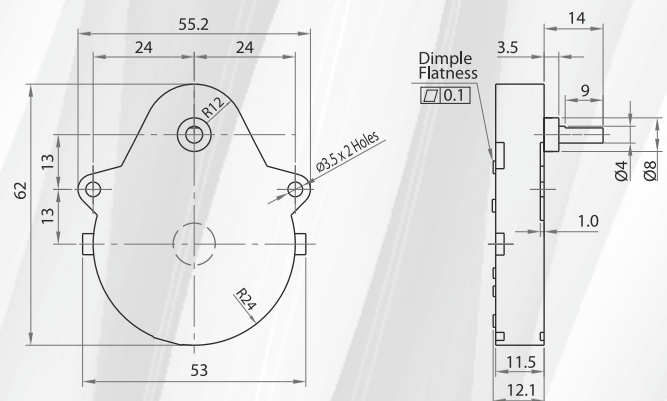
**Torque/Transmission Ratio/Life graph**



**Transmission Ratio**

For Transmission Ratios refer to page no.6

**Dimensional Drawing**





**GEAR SERIES**

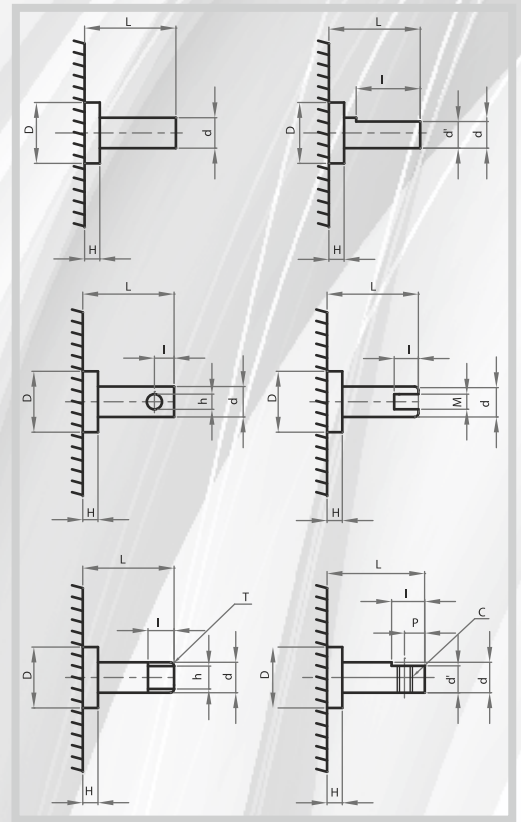
**GB2**

Spur Reduction Gearhead - 0.3 Nm

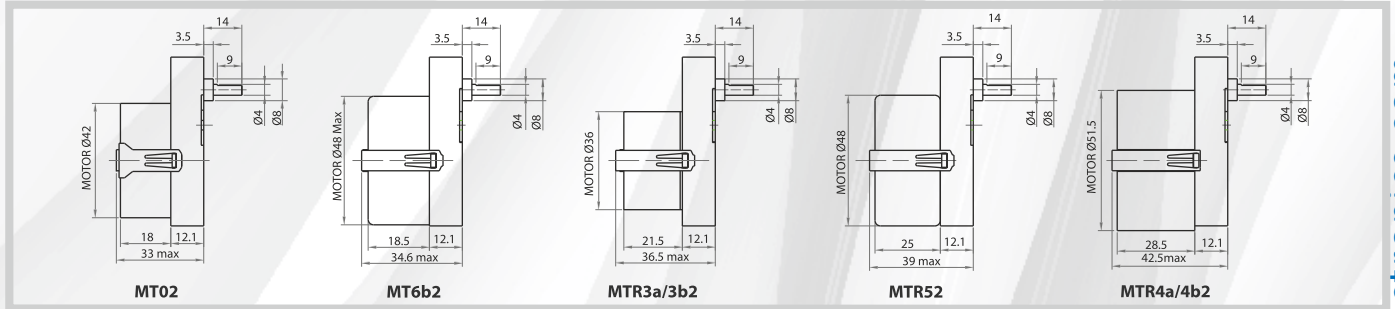
Shaft type catalogue

Shaft type	(+0.00/-0.10)			Shaft Diam.		P	M	T	h	C
	D	H	L	d	l					
OS	8	3.5	14	3.175	9	2.8				
OA	8	3.5	11	3.175	6	2.8				
OB	8	3.5	18	3.175	13	2.8				
OC	8	3.5	23	3.175	18	2.8				
OD	8	3.5	14	4	9	3.6				
OE	8	3.5	18	4	13	3.6				
OF	8	3.5	23	4						
OG	8	3.5	14	4.764	9	4.2				
OH	8	3.5	18	4.764	13	4.2				
OI	8	3.5	22	4.764	11	4.2				
OJ	8	3.5	24	4.764	19	4.2				
OK	8	3.5	27.5	4.764	20	4.2				
OL	8	3.5	10	4.764	6	4.2				
OM	8	3.5	14	4.764	11.5			1/8"		
ON	8	3.5	14	6.35	7		3			
OO	8	3.5	23	4	10				2	
OP	8	3.5	12	4						
OQ	8	3.5	22.5	5	5.5				2	
OR	12	3.5	17	6	10	5.4				
OT	12	3.5	23	6	16	5.4				
OU	12	3.5	28	6	18	5.4				
OV	12	3.5	54	6						
OW	12	3.5	24	7	17	6	9			M4
OX	12	3.5	17	7	10	6.3				
OY	12	3.5	23	7	15	5				
OZ	12	3.5	23	7						
PA	12	3.5	28	7	18	6.3				
PB	12	3.5	54	7						
PC	12	3.5	41.5	6	34	5.4				

Shaft Drawing



Assembly Drawings







**GEAR SERIES**

**GB5P**

**Spur Reduction Gearhead - 0.5.....1Nm**

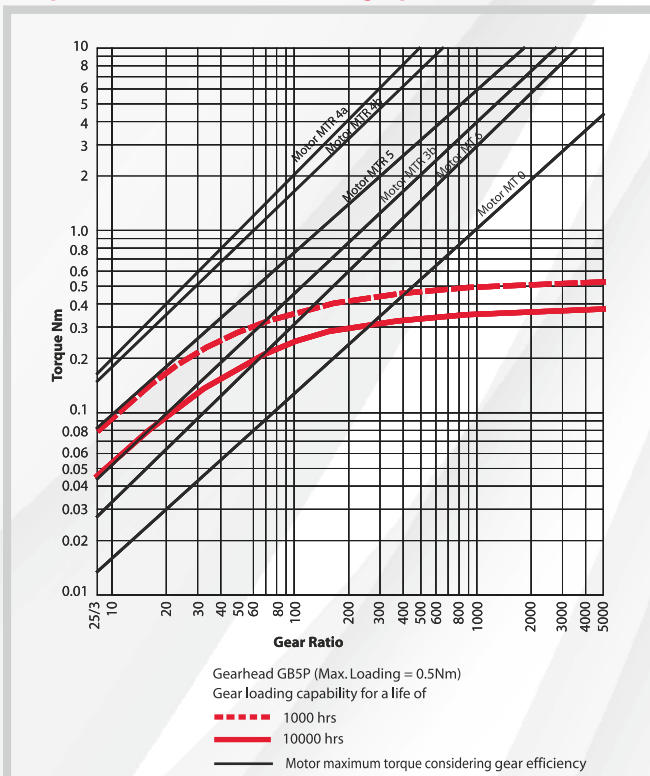
**Design**

Gearhead GB5P, the most popular gearhead, is a multi step gear box with all polyacetal gears which rotate on steel spindles which are polished to a mirror-finish and introduced between metal plates with a plastic frame. All bearings are permanently lubricated and therefore require no maintenance. Motor is attached to the gear box by means of snap clip. Thicker shafts (Ø6-7mm) mounted in robust bushings (Ø12mm) are available (GB5PS). Similarly the gears at the output end can be metal with thick shafts & robust bushings. Sintered gears variant also possible GB5P can also be combined with small DC Motors. To achieve higher gear torque, GB5P can be mounted on GB4, GBW & GBX. In same mounting we can also offer casted gearhead with & without ball bearing.

**Technical Data**

Gear Type		Spur (1st pair helical for certain ratios only)
Gear Torque	Nm	0.5.....1
Combination with Mechtex motors		Motor MT0, MT6, MTR/S3a/3b, MTR/S4a/4b and small DC motors
Mounting		any position
Weight	g	60
Axial thrust	N	20
Lateral force	N	60
Radial torque	Nm	0.6
Slipping clutches/free wheel		available for certain ratios
Output bearing		Sintered bronze sleeve bushings, (Ball bearing on request)
Output shafts	Ø	3.175, 4.00, 4.76, 5.00, 6.00 & 7..00 (others on request)
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	40

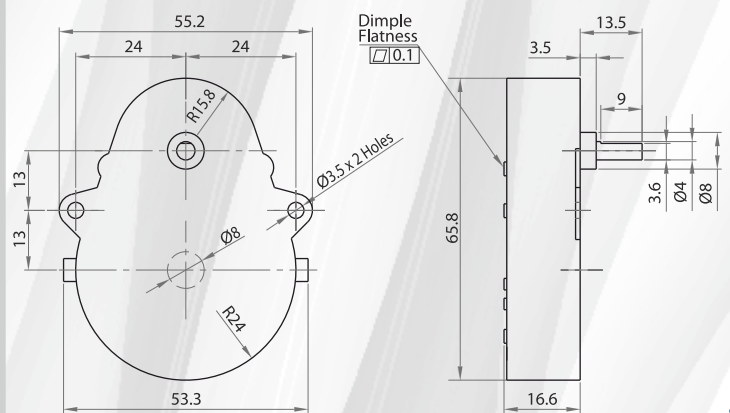
**Torque/Transmission Ratio/Life graph**



**Transmission Ratios**

For Transmission Ratios refer to page no. 6

**Dimensional Drawing**





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ELECTRONICS  
Mfg. Of Motion Control Devices &  
Specialize in Elevator Automation Products

**GEAR SERIES**

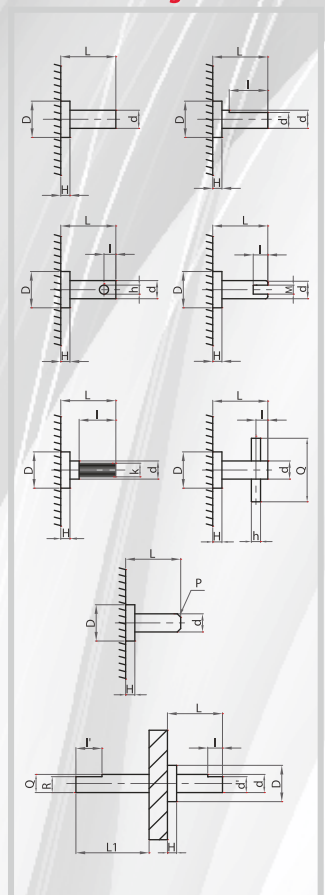
**GB5P**

Spur Reduction Gearhead - 0.5.....1Nm

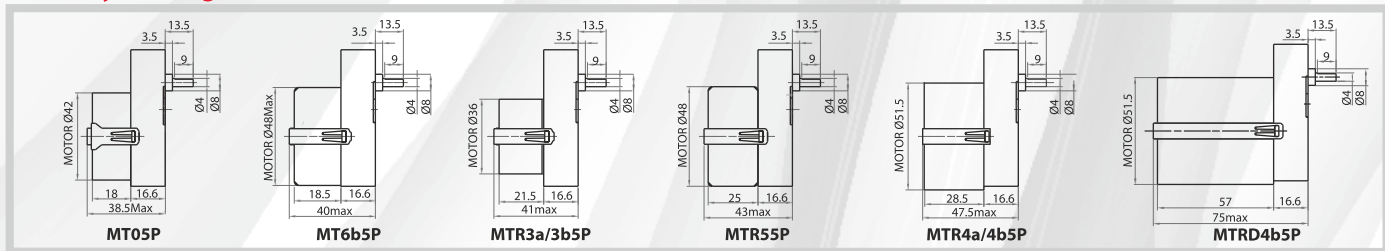
**Shaft type Catalogue**

Shaft type (+0.00/-0.10)	D	H	Shaft Diam.	L	l	d'	l'	L'	R	C	M	h	k	P	Q
OS	8	3.5	4	13.5	9	3.6									
OB	8	3.5	4	28.5	24.5	3.6									
OC	8	3.5	4	13.5	9	3									
OD	8	3.5	4	9	4.5	3.6									
OE	8	3.5	4	40	36	3.6									
OF	8	3.5	4	18.5	14	3									
OG	8	3.5	1/8"	13.5	9	2.8									
OH	8	3.5	1/8"	18.5	14	2.8									
OI	8	3.5	1/8"	23.5	17	2.8									
OJ	8	3.5	4	13.5	4							2			
OK	8	3.5	4	13.5	6.8							1.4			
OL	8	3.5	4	23.5	17	3.6									
OM	8	3.5	3/16"	12.5	8	4.2									
ON	8	3.5	3/16"	23.5	17	4.2									
OO	8	3.5	3/16"	28.5	22	4.2									
OU	8	3.5	3/16"	18.5	12	4.2									
OV	8	3.5	4	12.5	9	3.6	20	36	3.6	M4					
OW	12	3.5	6	13.5	9.9	4.5									
OX	12	3.5	6	23	18	5.4									
OY	12	3.5	6	54											
OZ	12	3.5	7	16	10	6									
PA	12	3.5	8	16	10	6									
PB	12	3.5	6	23.5	10	5									
PB	12	3.5	6	15.5	10.5	5.4									
PD	12	3.5	6	39	30	5.4									
PE	12	3.5	8	23	16	7.2									
PF	12	3.5	6	13.5	5							2			
PG	12	3.5	6	83	20							2			
PH	12	3.5	7	21.7	4.5							3			
PI	12	3.5	6	14.5	3.5							3			
PM	12	3.5	7	19	10						3				
Q8	8	3.5	4	13	8								3.95		
L1	8	3.5	4	10.2										A/F4	
L2	8	3.5	4	13.5	6.8							1.5			7.8

**Shaft Drawing**



**Assembly Drawings**





## GEAR SERIES

### GB5H

## Spur Reduction Gearhead - 0.8 Nm

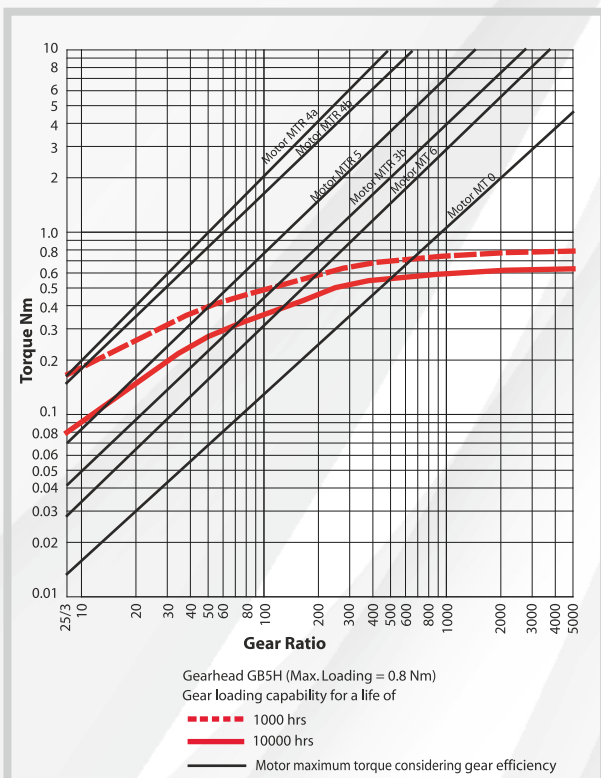
### Design

Gearhead GB5H, a moderately priced gearhead, is specially designed to cater to heavy duty application in a small frame. This is a multi step gear box with all thick metal gears that rotate on steel spindles which are polished to a mirror-finish and introduced between metal plates with a plastic frame. All bearings are permanently lubricated and therefore require no maintenance. Motor is attached to the gear box by means of snap clip. Thicker shafts (Ø6-7mm) mounted in robust bushings (Ø12mm) are available in a new variant (GB5HS). GB5H can also be combined with small DC Motors, To achieve higher gear torque, GB5H can be mounted on GB4.

### Standard Data

Gear Type		Spur Reduction
Gear Torque	Nm	0.8
Combination with Mechtex motors		MT0,MT6,MTR/S3a/3b,MTR/S-5,MTR/S4a/4b and small DC motors
Mounting		any position
Weight	g	65
Axial thrust	N	20
Lateral force	N	100
Radial torque	Nm	1.5
Slipping clutches/free wheel		not available
Output bearing		Sintered bronze sleeve bushings, (Ball bearing on request)
Output shafts	Ø	3.175,4.00,4.76,5.00,6.00 & 7..00 (others on request)
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	40

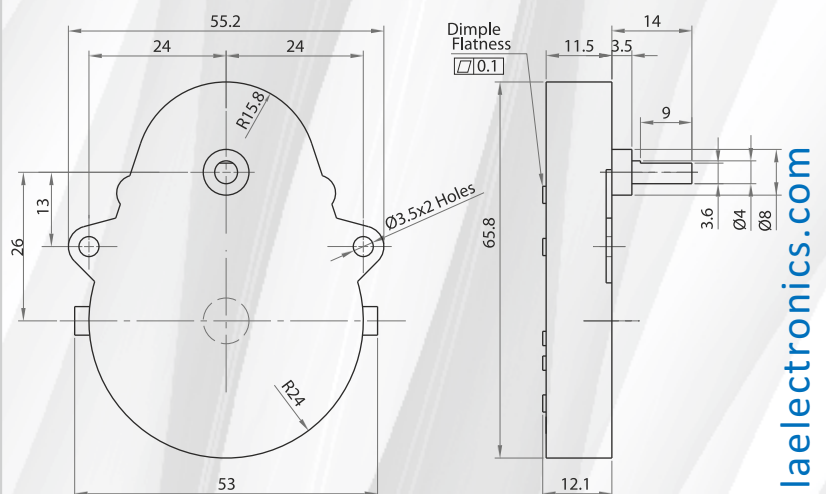
### Torque/Transmission Ratio/Life Graph



### Transmission Ratios

For Transmission Ratios refer to page no.6

### Dimensional Drawing





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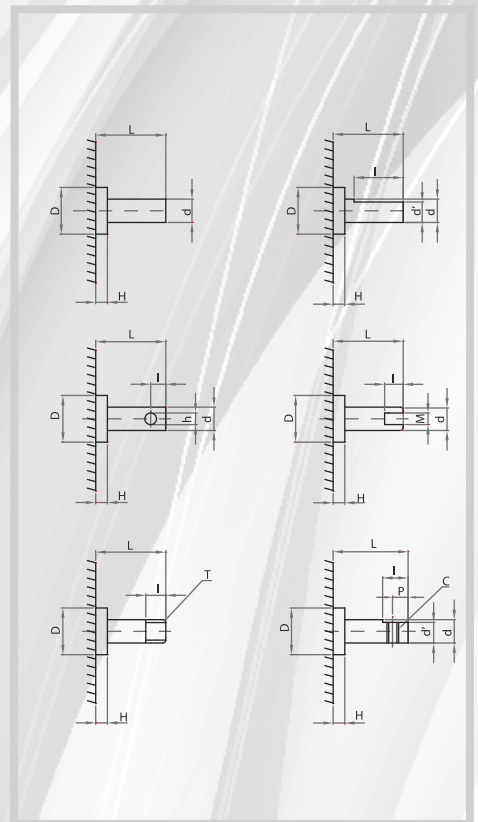
## GEAR SERIES

### GB5H

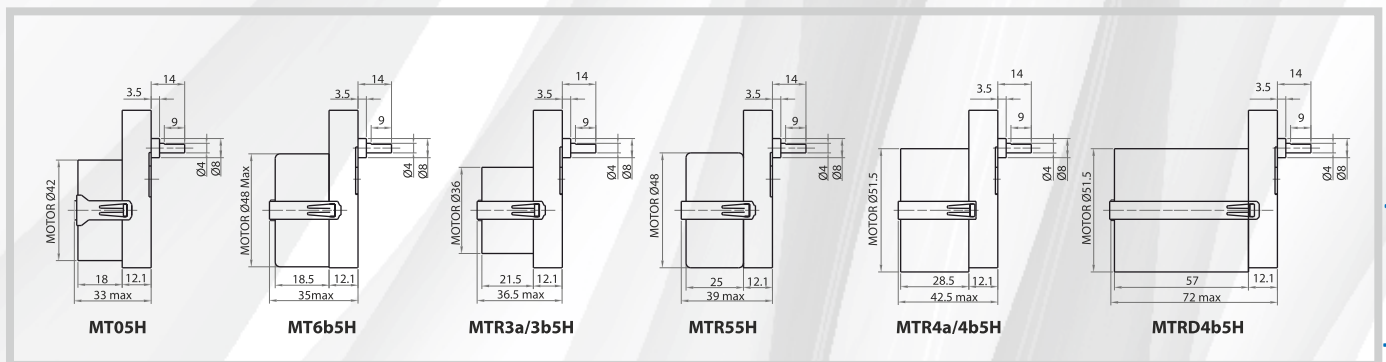
## Spur Reduction Gearhead - 0.8 Nm Shaft Drawings

### Shaft Type Catalogue

Shaft type	(+0.00/-0.10)	H	L <sub>D</sub>	Shaft Diam.	d	l	d'	P	M	T	h	C
OS	8	3.5	14		3.175	9	2.8					
OA	8	3.5	11		3.175	6	2.8					
OB	8	3.5	18		3.175	13	2.8					
OC	8	3.5	23		3.175	18	2.8					
OD	8	3.5	14		4	9	3.6					
OE	8	3.5	18		4	13	3.6					
OF	8	3.5	23		4							
OG	8	3.5	14		4.764	9	4.2					
OH	8	3.5	18		4.764	13	4.2					
OI	8	3.5	22		4.764	11	4.2					
OJ	8	3.5	24		4.764	19	4.2					
OK	8	3.5	27.5		4.764	20	4.2					
OL	8	3.5	10		4.764	6	4.2					
OM	8	3.5	14		3.175	11.5				1/8"		
ON	8	3.5	14		6.35	7			3			
OO	8	3.5	23		4	10					2	
OP	8	3.5	12		4							
OQ	8	3.5	22.5		5	5.5					2	
OR	12	3.5	17		6	10	5.4					
OT	12	3.5	23		6	16	5.4					
OU	12	3.5	28		6	18	5.4					
OV	12	3.5	54		6							
OW	12	3.5	24		7	17	6	9				M4
OX	12	3.5	17		7	10	6.3					
OY	12	3.5	23		7	15	5					
OZ	12	3.5	23		7							
PA	12	3.5	28		7	18	6.3					
PB	12	3.5	54		7							
PC	12	3.5	41.5		6	34	5.4					



### Assembly Drawings





## GEAR SERIES

### GB380CP

## Spur Reduction Gearhead - 0.5 Nm

### Design

Gearhead GB380CP is a multi step gearhead with all polyacetal gears which rotate on steel spindles, polished to a mirror-finish and introduced between metal plates with a plastic frame. All bearings are permanently lubricated and therefore require no maintenance. Thicker shafts ( $\varnothing 6-7\text{mm}$ ) mounted in robust bushings ( $\varnothing 12$ ) are available. Similarly the gears at the output end can be metal (GB380CPH) with thick shafts ( $\varnothing 6-7\text{mm}$ ) & robust bushings. Sintered gears variant also possible (GB380CSI).

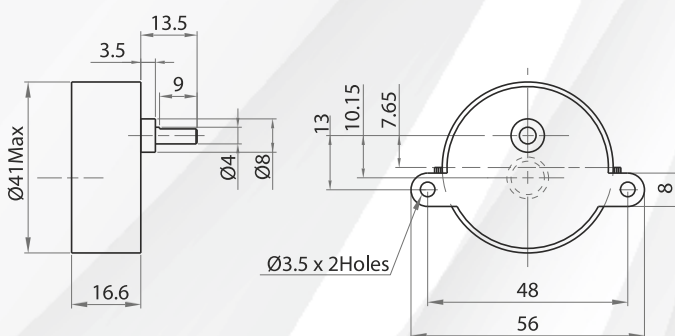
### Standard Data

Gear Type		Spur
Gear Torque	Nm	0.5
Combination with Mechtex motors		Small DC Motors up to dia. 35mm (DC 28/30/32) & MTR3a/3b & MTS3a/3b
Mounting		any position
Weight	g	55
Axial thrust	N	20
Lateral force	N	60
Radial torque	Nm	0.6
Output bearing		Sintered bronze sleeve bushings, (Ball bearing on request)
Output shafts	$\varnothing$	Shafts same as GB5P gear series
Ambient temperature operation	$^{\circ}\text{C}$	-15...+ 55
Enclosure	IP	30

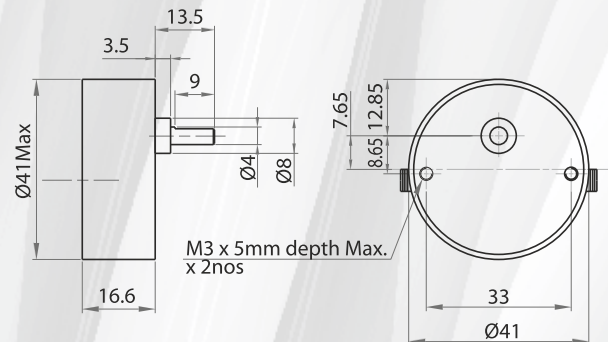
### Transmission Ratios

For Transmission Ratios refer to page no.6

### Dimensional Drawing



With Mounting Plate



With Round Plate Threaded Nut



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## GEAR SERIES

### GBL

## Spur Reduction Gearhead - 0.5 Nm

### Design

Gearhead GBL is designed to cater heavy loads in a small frame with the option to mount potentiometer in addition to the motor with diameters up to 36 mm. This gearhead has multi step thick metal gears at the output with possibility of using poly acetal gear in the first stage to damp the noise. The gears rotate on steel spindles that are polished to a mirror-finish & introduced between metal plates with a plastic frame. All bearings are permanently lubricated & therefore require no maintenance. Motor is attached to gear box by means of screws.

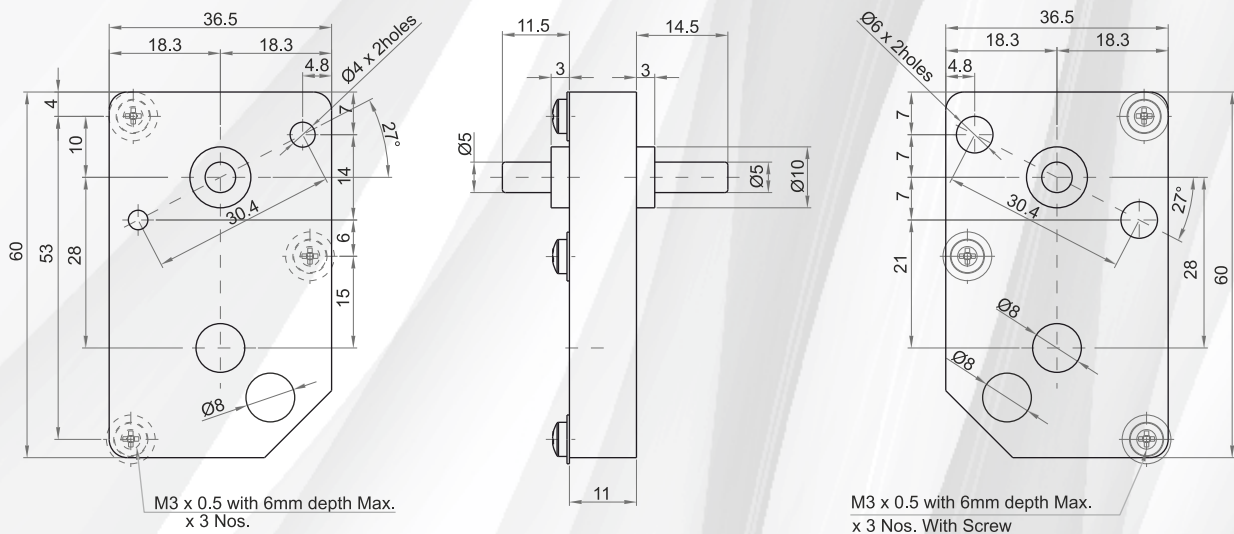
### Technical Data

Gear Type		Spur
Gear Torque	Nm	0.5
Combination with Mechtex motors		MTR2b / MTS2b / MTR3a / MTS3a / MTR3b / MTS3b / DC28 / D32 / DC30 & others on request
Mounting		any position
Weight	g	140
Axial thrust	N	20
Lateral force	N	50
Radial torque	Nm	0.6
Output bearing		Brass sleeve bushings, (Ball bearing on request)
Output shafts	Ø	dia. 5mm (Round) extended both sides; others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

### Transmission Ratios

77.88 , 150.15 (others on special request)

### Dimensional Drawing





## GEAR SERIES

### GBB

## Spur Reduction Gearhead - 0.5 Nm

### Design

The gearhead GB B is a spur reduction gearhead with 33mm OD & OFF centre shaft meant specially for DC motors with diameters up to 33 mm. It has a possibility of 5 to 8 stage reduction with initial stages are poly-acetal gears & final stages will be steel sintered. All bearings are permanently lubricated & therefore require no maintenance. Motor is attached to gear box by means of screws. The nominal torque rating for this gearhead is 0.5 Nm with peak torque range up to 0.8 Nm. This gearhead has been categorised in 3 different housing sizes as per gear reduction for 4, 6 & 8 stages.

### Technical Data

Gear Torque	Nm	0.5
Gear Type		Spur (1st pair helical)
Combination with Mechtex motors		DC24 / DC28 / D32 / DC30* others on request
Mounting		any position ; preferably with shaft horizontal
Weight	g	Variable with reduction stages (140 approx)
Axial thrust	N	15
Lateral force	N	50
Radial torque	Nm	0.6
Output bearing		Sintered Bronze sleeve bushings
Output shafts	Ø	dia.5 x 12 mm (with a flat) others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

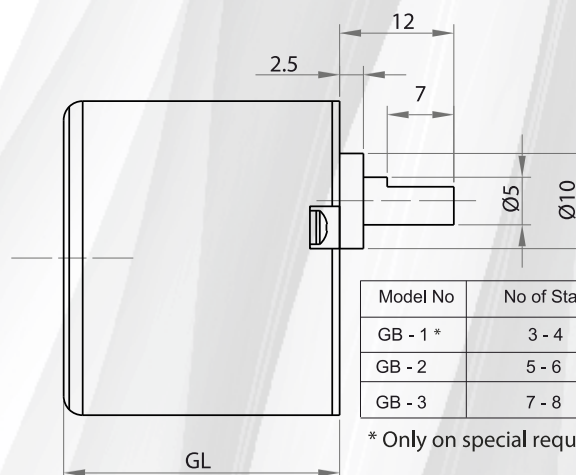
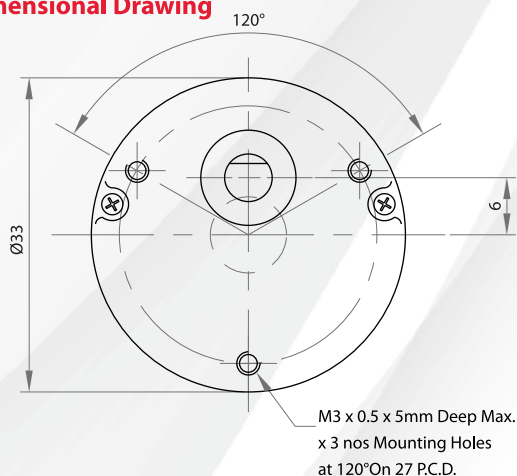
### Transmission Ratios

GB-2 - 3.5\*, 4.67\*, 6, 8, 8.75\*, 11.67\*, 15, 20, 21.875\*, 29.17\*, 37.5, 50, 54.69\*, 72.92\*, 94, 125, 136.72\*, 182.29\*, 235, 312.5

GB-3 - 341\*, 455.73\*, 586, 781.25, 854.5\*, 1139\*, 1465, 1953.125

Note - DC30 motor possible with ratios marked with \* suffix

### Dimensional Drawing



Model No	No of Stages	GL
GB - 1 *	3 - 4	19.7
GB - 2	5 - 6	24.4
GB - 3	7 - 8	29.0

\* Only on special request



## GEAR SERIES

### GBC

## Spur Reduction Gearhead - 0.5 Nm

### Design

The gearhead GB C is a spur reduction gearhead with 37mm OD & OFF centre shaft meant specially for DC motor with diameters up to 36 mm. It has a possibility to mount 2 series synchronous and stepper motor. It is also possible to mount 3 series motors on special request only. It has a possibility of 2 to 6 stage reduction with initial stages are poly acetal gears & final stage will be steel sintered. All bearings are permanently lubricated & therefore require no maintenance. Motor is attached to gear box by means of screws. The nominal torque rating for this gearhead is 0.5 Nm with peak torque range up to 0.8 Nm. This gearhead has been categorised in 3 different housing sizes as per gear reduction for 4, 6 & 8 stages.

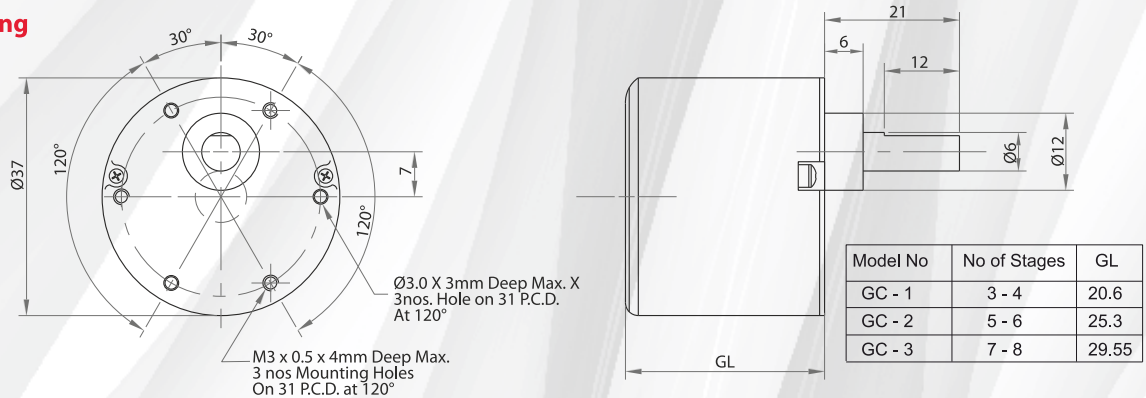
### Technical Data

Gear Type		Spur Reduction(1st pair helical)
Gear Torque	Nm	0.5
Combination with Mechtex motors		DC24 / DC28 / D32 / DC30* / DC38* others on request
Mounting		any position ; preferrably with shaft horizontal
Weight	g	Variable with reduction stages (180 approx)
Axial thrust	N	15
Lateral force	N	50
Radial torque	Nm	0.6
Output bearing		Sintered Bronze sleeve bushings
Output shafts	Ø	dia.6 x 21 mm (with a flat) others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

### Transmission Ratios

GC-1 - 4.07\*, 5.54\*, 6.99, 9.5, 10.19\*, 13.85\*, 17.47, 23.75, 25.48\*, 34.64\*, 43.68, 59.38  
GC-2 - 63.71\*, 86.59\*, 109.21, 148.38, 159.27\*, 216.47\*, 273.43, 371.1  
GC-3 - 398.19\*, 541\*, 682.61, 927.7, 995.48\*, 1352.95\*, 1706.54, 2319  
Note - DC30 / DC38 motors possible with ratios marked with \* suffix

### Dimensional Drawing







**MOTOR SERIES**

**MTR4b**

**Spur Reduction Gearhead - 0.5 Nm**

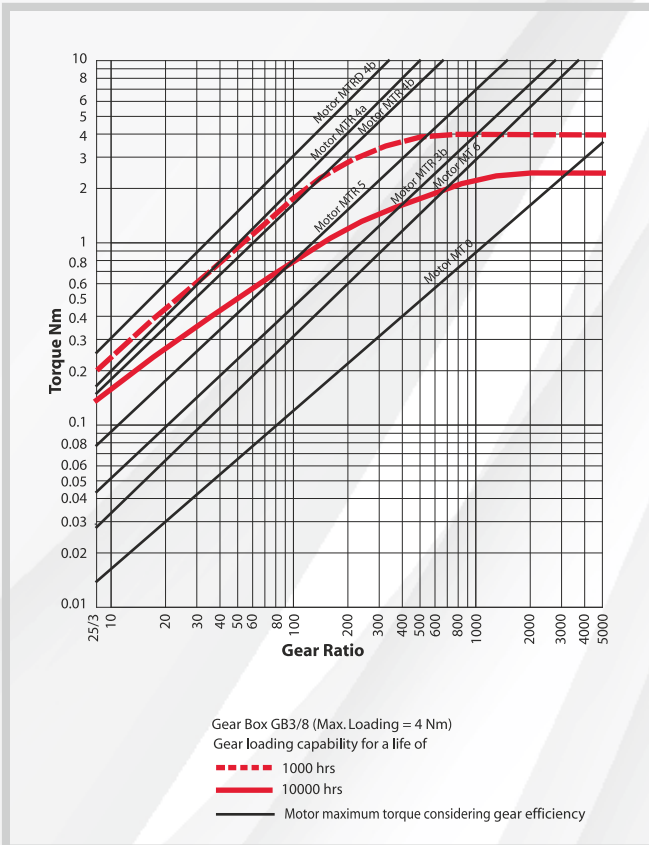
**Design**

Gearhead GB3/8 contains heavily loaded steel gear wheels. The spur gears rotate on fixed steel spindles which are hardened and polished to a mirror finish. The thick output shaft rotates in robust sintered bushings. All the gears are housed between two metal plates with a plastic frame. All bearings are permanently lubricated and therefore require no maintenance. Economical versions with poly-acetal or sintered gears available. This gear box can also be combined with small to medium sizes of DC motors.

**Technical Data**

Gear Type		Spur
Gear Torque	Nm	4
Combination with Mechtex motors		Motor MT0, MT6, MTR/S3a/3b, MTR/S-5, MTR/S4a/4b and small DC motors
Mounting		any position
Weight	g	200
Axial thrust	N	100
Lateral force	N	250
Radial torque	Nm	3
Slipping clutches/free wheel		available for certain ratios
Output bearing		Sintered bronze sleeve bushings, ( Ball bearing on request)
Output shafts	Ø	dia. 8 x 23 mm (with a flat), others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

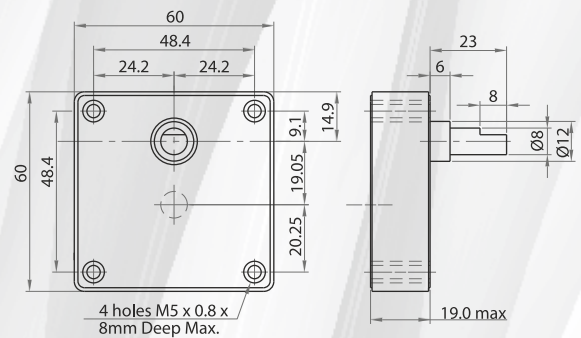
**Torque/Transmission Ratio/Life Graph**



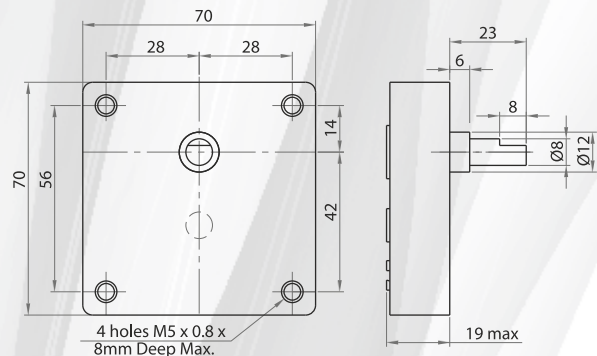
**Transmission Ratios**

For Transmission Ratios refer to page no.6

**Dimensional Drawing GB3**



**Dimensional Drawing GB8**





## GEAR SERIES

### GB7

## Spur Reduction Gearhead - 5 Nm

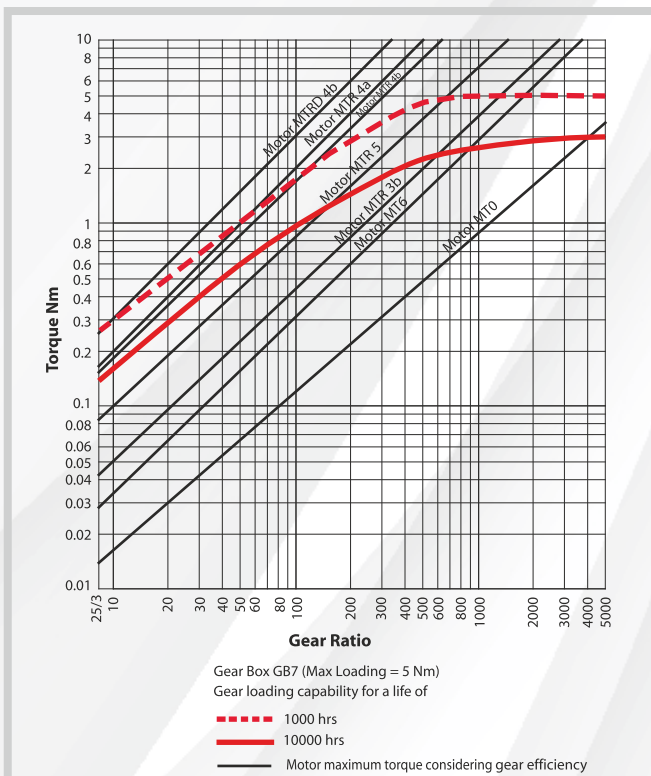
### Design

Gearhead GB7 contains heavily loaded steel gear wheels. The spur gears rotate on fixed steel spindles which are hardened and polished to a mirror finish. The thick output shaft rotates in robust sintered bushings. All the gears are housed in a pressure die cast housing & closed by metal plates. All bearings are permanently lubricated and therefore require no maintenance. Economical versions with poly-acetal or sintered gears available. This gear box can also be combined with small to medium sizes of DC motors (upto dia 38 mm) Output shaft can be emerging from the rear side or both sides.

### Technical Data

Gear Type		Spur
Gear Torque	Nm	5
Combination with Mechtex motors		MT0, MT6, MTR/S-5, MTR/S3a/3b, MTR/S4a/4b MTR/SD4b-RE & DC motors (upto dia38 mm)
Mounting		any position
Weight	g	300
Axial thrust	N	100
Lateral force	N	400
Radial torque	Nm	4
Slipping clutches/free wheel		available for certain ratios
Output bearing		Sintered bronze sleeve bushings
Output shafts	Ø	dia. 8 x 22 mm (with a flat), others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

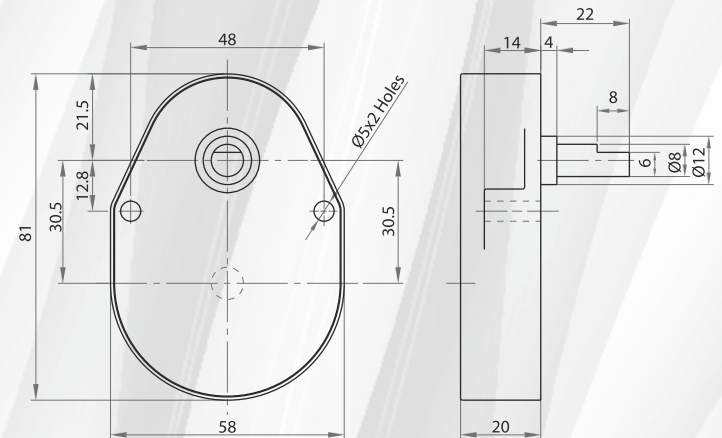
### Torque/Transmission Ratio/Life Graph



### Transmission Ratios

For Transmission Ratios refer to page no. 6

### Dimensional Drawing





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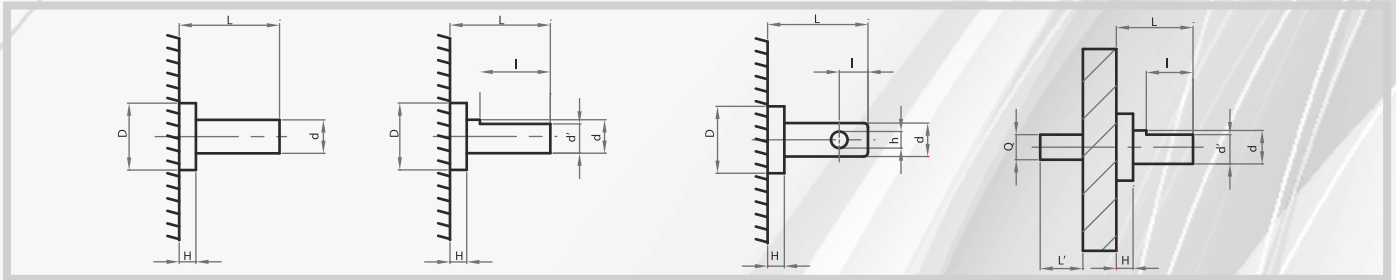


## GEAR SERIES

### GB7

## Spur Reduction Gearhead - 5 Nm

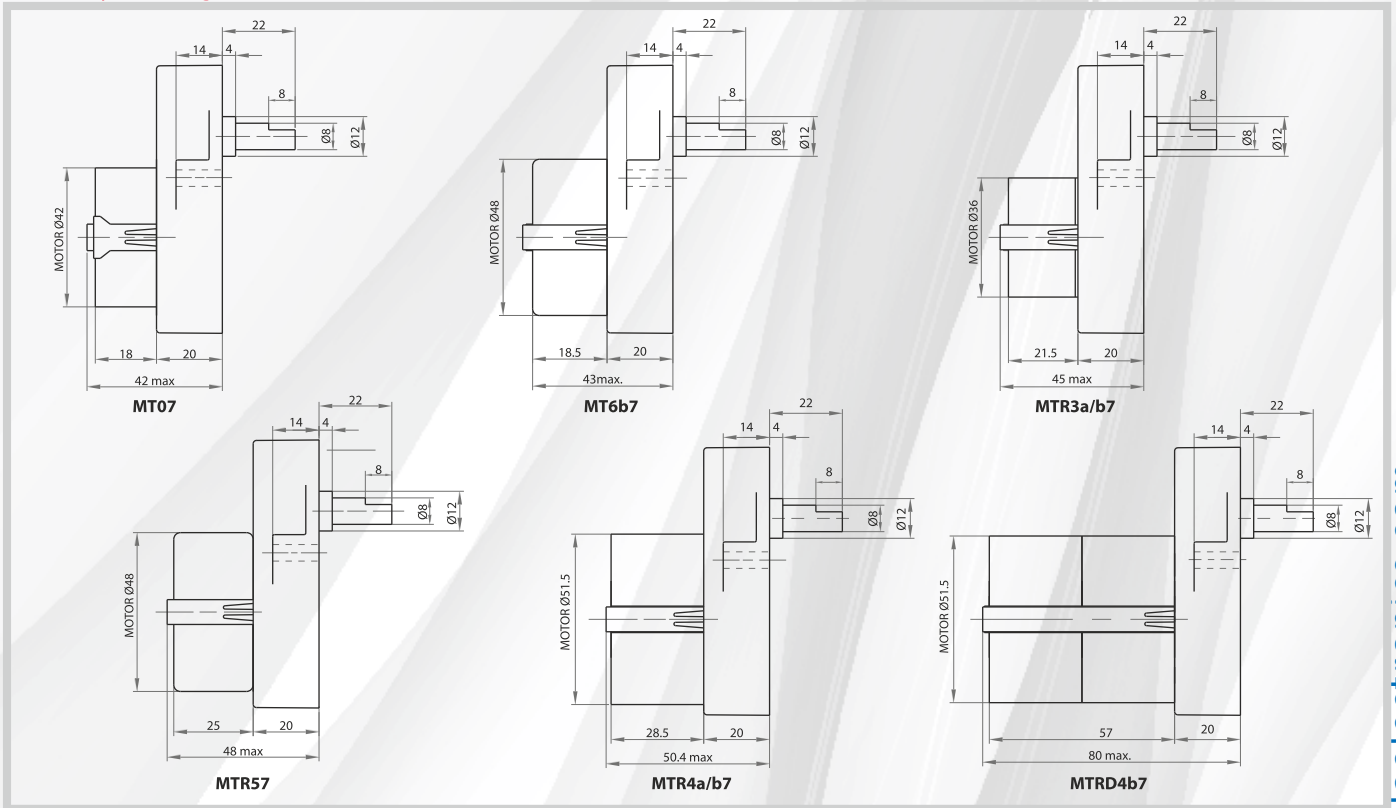
### Shaft Drawings



### Shaft Type Catalogue

Shaft type	D (+0.00/-0.10)	H	d (dia)	L	I	d'	L'	Q	h
OS	12	4	8	22	8	6			
OA	12	4	8	32	18	6			
OB	12	4	8	22	8	6	12.5	6.35	
OC	12	4	8	22	9				3

### Assembly Drawings





## GEAR SERIES

### GB4

## Spur Reduction Gearhead -5 Nm

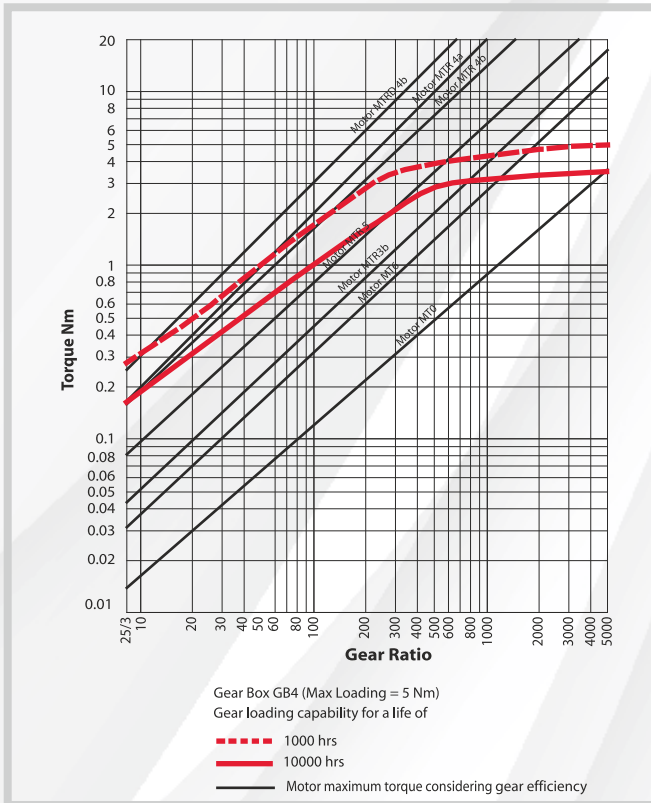
### Design

Gearhead GB4 contains heavily loaded steel gear wheels. The spur gears rotate on fixed steel spindles which are hardened and polished to a mirror finish. The thick output shaft rotates in robust sintered bushings. It can also be mounted on a ball bearing which can be provided in the output bush of the gear box. All the gears are housed between two metal plates with a plastic frame. All bearings are permanently lubricated and therefore require no maintenance. Economical versions with poly-acetal or sintered gears available. This gear box can also be combined with small to medium sizes of DC motors.

### Standard Data

Gear Type		Spur
Gear Torque	Nm	5
Combination with Mechtex motors		MT0, MT6, MTR/S3a/3b, MTR/S-5, MTR/S 4a/4b/D4b and small DC motors / (upto 40)
Mounting		any position
Weight	g	350
Axial thrust	N	100
Lateral force	N	300
Radial torque	Nm	4
Slipping clutches/free wheel		available for certain ratios
Output bearing		Sintered Bronze sleeve bushings, (Ball Bearing on request)
Output shafts	Ø	dia. 8 x 23 mm (with a flat), others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

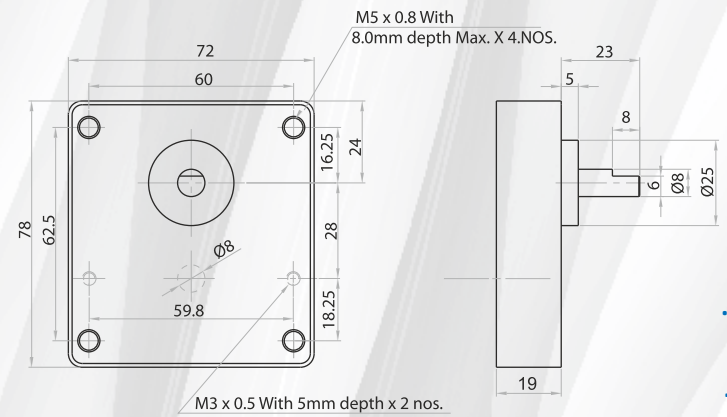
### Torque/Transmission Ratio/Life Graph



### Transmission Ratios

For Transmission Ratios refer to page no.6

### Dimensional Drawing





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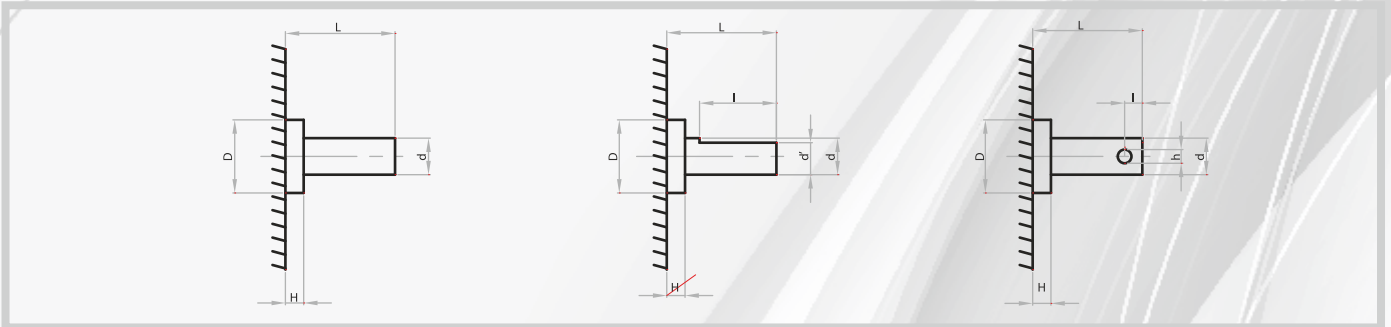


## GEAR SERIES

### GB4

Spur Reduction Gear head - 5 Nm

#### Shaft Drawings



#### Shaft Type Catalogue

Shaft type	D (+0.00/-0.10)	H	d(dia)	L	l	d'	h
OS	25	5	8	23	8	6	
OA	25	5	8	33	18	6	
OC	25	5	8	23	9		3

#### Assembly Drawings

