MECHTEX

UK & Ireland Distributor:

MOTION CONTROL PRODUCTS

AC Synchronous Motors

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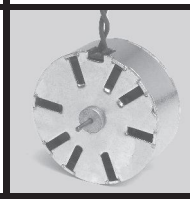
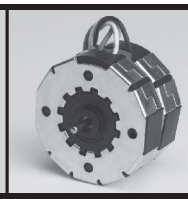
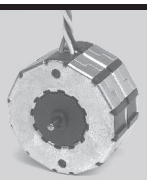
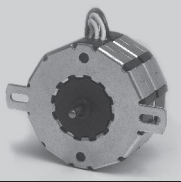
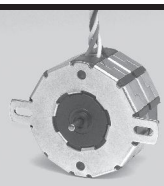
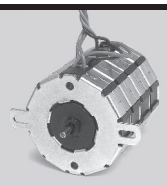
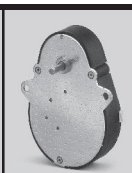
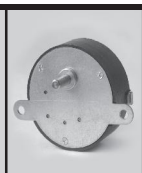
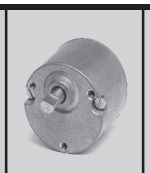
RoHS Compliant

	Uni-Directional Synchronous Motors		Bi-Directional Synchronous Motors				
							
Motor Type	**MT0**	**MT6b**	**MTR2b**	**MTR3a**	**MTR3b**	**MTR5**	**MTR4a**
Speed 'rpm'							
@ 50 Hz	375	500	500	250	500	500	250
@ 60 Hz	450	600	600	300	600	600	300
Torque 'Ncm'							
@ 50 Hz	0.2	0.9	0.15	0.8	0.65	1.35	3.6
@ 60 Hz	0.16	0.8	0.14	0.8	0.6	1.25	3.3
Input Power 'W'							
@ 50 Hz	1.4	2.4	1	1.5	1.5	2.1	3.1
@ 60 Hz	1.5	1.8	1	1.5	1.5	2.2	3.2
Motor Shafts 'mm'	Ø 1.5 x 9	Ø 2 x 9.5	Ø 1.5 x 10.5	Ø 2 x 8	Ø 2 x 8	Ø 2 x 9	Ø 3 x 8.5
Dimensions 'mm'	Ø 42 x 18	Ø 48 x 18.5	Ø 20.4 x 17	Ø 36 x 21.5	Ø 36 x 21.5	Ø 48 x 25	Ø 51.5 x 28.5

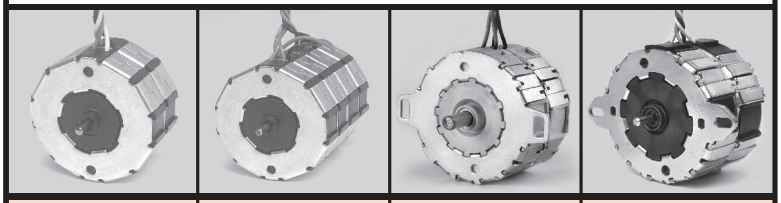
	Bi-Directional Stepper Motors						
							
Motor Type	**MTS2b**	**MTS3a**	**MTS3b**	**MTS5**	**MTS4a**	**MTS4b**	**MTSD4b**
Step Angle/step	15°	7.5°	15°	15°	7.5°	15°	15°
No. of steps/rev.	24	48	24	24	48	24	24
Holding Torque							
Bipolar Operation	0.4 Ncm	1.6 Ncm	1.4 Ncm	2.5 Ncm	6.2 Ncm	5.2 Ncm	10 Ncm
Unipolar Operation	0.3 Ncm	1.2 Ncm	1 Ncm	2.1 Ncm	4.5 Ncm	4.0 Ncm	7.2 Ncm
Motor Shafts 'mm'	Ø 1.5 x 10.5	Ø 2 x 8.0	Ø 2 x 8.0	Ø 2 x 9	Ø 3 x 8.5	Ø 3 x 8.5	Ø 3 x 9.0
Dimensions 'mm'	Ø 20.4 x 17	Ø 36 x 21.5	Ø 36 x 21.5	Ø 48 x 25	Ø 51.5 x 28.5	Ø 51.5 x 28.5	Ø 51.5 x 57

	Reduction Gearheads									
										
Gearhead Type	**GB2**	**GB5P**	**GB5H**	**GB38OCP**	**GBL**	**GBB**	**GBC**	**GB3/8**	**GB7**	**GB4**
Gear Torque(Nm)	0.3	0.5.....1	0.8	0.5	0.5	0.5	0.5	4	5	5
Transmission Ratios	2.5 to 4536000	25/3 to 540000	25/3 to 6000	25/6 to 375	77.88 to 150.15	4.66 to 1953	5.54 to 2319	6 to 600	25/3 to 2000	25/3 to 10^9 *
Slipping Clutches	Oneway freewheel**	Oneway freewheel **	-----	-----	------	------	------	Oneway freewheel **	Oneway freewheel **	Oneway freewheel **
	Two way friction**	Two way friction **	-----	-----	------	------	------	Two way friction **	Two way friction **	Two way friction **
Output Shafts 'mm'	Ø 4 x 14	Ø 4 x 13.5	Ø 4 x 14	Ø 4 x 13.5	Ø 5 x 14.5	Ø 5 x 12	Ø 6 x 21	Ø 8 x 23	Ø 8 x 22	Ø 8 x 23
Dimensions 'mm'	55.2 x 62 x 12.1	55.2 x 65.8 x 16.6	55.2 x 65.8 x 12.1	Ø 41 x 16.6	36.5 x 60 x 11	Ø 33 x GL #	Ø 37 x GL #	60 x 60 x 19/70x70x19	58 x 81 x 20	78 x 72 x 19

* In combination with GB5P ** For certain ratios only, # with respect to reduction stages.

All specifications subject to change without notice

Bi-Directional Synchronous Motors

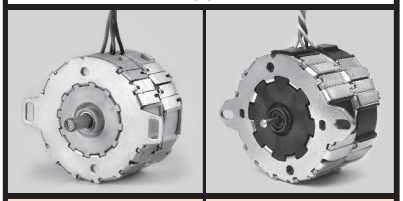


MTR4b	MTRD4b	MTR7a	MTR8c
500	500	250	375
600	600	300	450
2.7	5.1	7.2	10.5
2.5	4.5	6.2	8.5
3.6	7.0	5.8	9.5
3.7	7.5	5.0	9.7
Ø 3 x 8.5	Ø 3 x 8.5	Ø 6.35 x 13	Ø 4 x 12.2
Ø 51.5 x 28.5	Ø 51.5 x 57	Ø 59 x 35	Ø 66.4 x 40.4

Linear Actuators

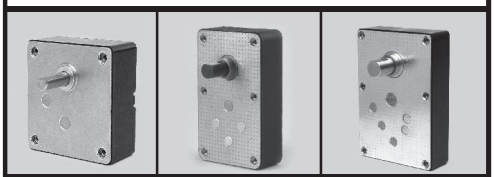
Actuator Type	MTR3L	Actuator Type	MTS3L
Linear speed (mm/sec)		Linear speed (mm/sec)	6.67
@ 50 Hz	6.67	@ 200 pps	
@ 60 Hz	8	Travel / step (mm)	0.033
Linear travel (mm)		Linear travel (mm)	13
@ 50 Hz	13		
@ 60 Hz	13		
Max force (N)		Max force (N)	20
@ 50 Hz	20		
@ 60 Hz	20		
Actuator Shaft 'mm'	M3 x 0.5 x 6	Actuator Shaft 'mm'	M3 x 0.5 x 6
Dimensions 'mm'	Ø 36 x 40.5	Dimensions 'mm'	Ø 36 x 40.5

Bi-Directional Stepper Motors



MTS7a	MTS8c/MTS8c-RE
7.5°	11.25°
48	32
17.1 Ncm	30/45 Ncm
13 Ncm	——
Ø 6.35 x 13	Ø 4 x 12.2
Ø 59 x 35	Ø 66.4 x 40.4

Reduction Gearheads



GBU / V	GBW	GBX
6	15	30
2 to 600	25/3 to 10^9 *	50/3 to 10^9 *
——	——	——
——	——	——
Ø 8 x 25	Ø 12 x 25.5	Ø 15 x 26.5
68x68x29 /65x65x29	65 x 107 x 29	80 x 118 x 29

Geared Synchronous motors Combinations

Reduction Gearhead	Synchronous motors		Permanent Magnet								
	Unidirectional		Bi-directional Synchronous motors								
	MT0	MT6b	MTR2b	MTR3a	MTR3b	MTR5	MTR4a	MTR4b	MTRD4b	MTR7a	MTR8c
GB2	MT02	MT6b2	MTR2b2	MTR3a2	MTR3b2	MTR52	MTR4a2	MTR4b2	*	*	*
GB5P	MT05P	MT6b5P	MTR2b5P	MTR3a5P	MTR3b5P	MTR55P	MTR4a5P	MTR4b5P	*	*	*
GB5H	MT05H	MT6b5H	MTR2b5H	MTR3a5H	MTR3b5H	MTR55H	MTR4a5H	MTR4b5H	*	*	*
GB38OCP	*	*	MTR2b38OCP	MTR3a38OCP	MTR3b38OCP	*	*	*	*	*	*
GBB/C/L	*	*	MTR2bB/C/L	MTR3aB/C/L	MTR3bB/C/L	*	*	*	*	*	
GB3/8	MT03/8	MT6b3/8	*	MTR3a3/8	MTR3b3/8	MTR53/8	MTR4a3/8	MTR4b3/8	MTRD4b3/8	*	*
GB7	MT07	MT6b7	*	MTR3a7	MTR3b7	MTR57	MTR4a7	MTR4b7	MTRD4b7	*	*
GB4	MT04	MT6b4	*	MTR3a4	MTR3b4	MTR54	MTR4a4	MTR4b4	MTRD4b4	*	*
GBV/U	MT0V/U	MT6bV/U	*	MTR3aV/U	MTR3bV/U	MTR5V/U	MTR4aV/U	MTR4bV/U	MTRD4V/U	MTR7aV/U	MTR8cV/U
GB W	MT05P-W	MT6bW	*	MTR3aW	MTR3bW	MTR5W	MTR4aW	MTR4bW	MTRD4bW	MTR7aW	MTR8cW
GB X	MT05P-X	MT6bX	*	MTR3aX	MTR3bX	MTR5X	MTR4aX	MTR4bX	MTRD4bX	MTR7aX	MTR8cX

Geared Stepper motors Combinations

Reduction Gearheads	Permanent Magnet Stepper motors								
	MTS2b	MTS3a	MTS3b	MTS5	MTS4a	MTS4b	MTSD4b	MTS7a	MTS8c
GB2	MTS2b2	MTS3a2	MTS3b2	MTS52	MTS4a2	MTS4b2	*	*	*
GB5P	MTS2b5P	MTS3a5P	MTS3b5P	MTS55P	MTS4a5P	MTS4b5P	*	*	*
GB5H	MTS2b5H	MTS3a5H	MTS3b5H	MTS55H	MTS4a5H	MTS4b5H	*	*	*
GB38OCP	MTS2b38OCP	MTS3a38OCP	MTS3b38OCP	*	*	*	*	*	*
GBB/C/L	MTS2bB/C/L	MTS3aB/C/L	MTS3bB/C/L	*	*	*	*	*	
GB3/8	*	MTS3a3/8	MTS3b3/8	MTS53/8	MTS4a3/8	MTS4b3/8	MTSD4b3/8	*	*
GB7	*	MTS3a7	MTS3b7	MTS57	MTS4a7	MTS4b7	MTSD4b7	*	*
GB4	*	MTS3a4	MTS3b4	MTS54	MTS4a4	MTS4b4	MTSD4b4	*	*
GBV/U	*	MTS3aV/U	MTS3bV/U	MTS5V/U	MTS4aV/U	MTS4bV/U	MTSD4bV/U	MTS7aV/U	MTS8cV/U
GB W	*	MTS3aW	MTS3bW	MTS5W	MTS4aW	MTS4bW	MTSD4bW	MTS7aW	MTS8cW
GBX	*	MTS3aX	MTS3bX	MTS5X	MTS4aX	MTS4bX	MTSD4bX	MTS7aX	MTS8cX

Geared DC motors Combinations

Reduction Gearheads	Metal / Carbon Brush DC Motors					
	DC28	DC30	DC32	DC38	DC42	DC52
GB2	DC28GB2	*	DC32GB2	*	*	*
GB5P	DC28GB5P	DC30GB5P	DC32GB5P	DC38GB5P	*	*
GB5H	DC28GB5H	DC30GB5H	DC32GB5H	DC38GB5H	*	*
GB38OCP	DC28GB38OCP	DC30GB38OCP	DC32GB38OCP	DC38GB38OCP	*	*
GBL	DC28GBL	DC30GBL	DC32GBL	*	*	*
GBB	DC28GBB	DC30GBB	DC32GBB	*	*	*
GBC	DC28GBC	DC30GBC	DC32GBC	DC38GBC	*	*
GB3/8	DC28GB3/8	DC30GB3/8	DC32GB3/8	DC38GB3/8	*	*
GB7	DC28GB7	DC30GB7	DC32GB7	DC38GB7	*	*
GB4	DC28GB4	DC30GB4	DC32GB4	DC38GB4	*	*
GBV/U	DC28GB V/U	DC30GB V/U	DC32GB V/U	DC38GB V/U	DC42GB V/U	DC52GB V/U
GBW	DC28GB W	DC30GB W	DC32GB W	DC38GB W	DC42GB W	DC52GB W
GBX	DC28GB X	DC30GB X	DC32GB X	DC38GB X	DC42GB X	DC52GB X

Introduction

Characteristic features of MECHTEX® Synchronous Motors

- For Coil ≥ 42V AC, 2kV insulation voltages between coil and housing for 1 min. & For Coil ≤ 42V AC, 0.6 k V/50 Hz insulation voltages between coil and housing for 1 min.
- Life expectancy in continuous operation 3…10years
- UL marking (on request)/ CE marking (on request)/ RoHS compliant
- Maintenance-free Polyacetal / Self-lubricating sintered bronze bushings or ball-bearings.
- Wide operating range in the case of reversing synchronous motors.
- Stall protection in most MECHTEX® motors (except LOWER duty cycle motors)
- Each motor is subjected to final inspection
- Special windings for intermittent operations (80%ED, 60% ED, 40% ED, 30% ED, 20% ED etc)

Characteristic features of MECHTEX® Reduction Gearheads

- 13 series with a gear torque range from 0.3 Nm to 30 Nm
- Wide range of transmission rations from i = 2 to 3,780,000.
- All gears are permanently lubricated and therefore maintenance-free
- Motor and gear are linked by snap-on clips, screw clip or screws mounting.
- Various output shaft options available as standard.
- Easy mounting by means of two, three, four or six fastening screws
- Optional mounting position (output shaft preferably horizontal)

Ordering Data

Description 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

MOTOR ORDERING DATA

Series of Motors
see page 5

Approvals
N Standard
C CE marked
U UL marked
X other approvals

Supply Voltage
see page 5

Mounting Assessories
N Snap clip
S Screw Clip
P mounting plate
T internal screw mounting

GEARHEAD ORDERING DATA

Reduction gear series
see page 5

Gear ratio
page 6

Output shaft
OS standard output
For other shaft type or special output shaft see details of the individual reduction gear series

Sense of rotation of shaft
(view gear side with motor facing away)
C clockwise rotation
A anticlockwise rotation
R reversible rotation
B bidirectional rotation
F free rotation

Customisation code

Order Specifications For Motor /Gearhead Combinations

One may select specific motor or gearhead or its combination. The data given as under :

Motor Ordering Data

Series of Motors

Motor Series	0	6b	2b	3a	3L	3b	5	4a	4b	4b-RE	D4b	D4b-RE	7a	8c	8c-RE
Synchronous Motor	00C	06B	02B	03A	03L	03B	05B	04A	04B	04G	04D	04E	07A	08C	08E
Unipolar Stepper Motor	10C	16B	12B	13A	13L	13B	15B	14A	14B	14G	14D	14E	17A	----	----
Bipolar Stepper motor	20C	26B	22B	23A	23L	23B	25B	24A	24B	24G	24D	24E	27A	28C	28E

Brushed DC Motor

DC28	DC30	DC32	DC38	DC42	DC52
A28	A30	A32	A38	A42	A52
B28	B30	B32	B38	B42	B52
W28	M30	E32	M38	M42	M52

Supply Voltage

A1	230 50Hz
A4	230 60Hz
B1	110 50Hz
B4	110 60Hz
C1	24 50Hz
C4	24 60Hz
F1	12 50Hz
F4	12 60Hz
G1	48 50Hz
G4	48 60Hz
D1	24 V DC
D2	12 V DC
D3	6 V DC
D4	3 V DC
D5	18 V DC
D6	9 V DC
D7	4.5V DC

Other voltages on request

Gearhead Ordering Data

GB2

2A	GB2 standard
2C	GB2 std 12 mm bush

GB5P

5P	GB5P standard
5Q	GB5P with atleast 2 gears brass
5S	GB5P atleast 1 gear sintered
5T	GB5P std 12 mm bush
5U	GB5P std 12 mm bush 2 gears brass
5V	GB5P std 12 mm bush atleast 1 sintered gear
5W	GB5F std 8 mm sintered bush
5X	GB5F std 12 mm sintered bush
51	GB5P plate with top side ball bearing
52	GB5P plate with both side ball bearing
ZA	GB5P in casting with top plate brass bush
ZB	GB5P in casting with top plate sintered bush
Z1	GB5P in casting with top side ball bearing
Z2	GB5P in casting with both side ball bearing

GB5H

5H	GB5H standard
5I	GB5H atleast 1 plastic
5J	GB5HS
5K	GB5HpS

GB38OCP

OA	with mounting plate
OB	OCPH with mounting plate & atleast 2 brass gears
OC	OCPHS with mounting plate & bush dia 12 mm
OD	OCPSiHS with mounting plate & std 12 mm bush atleast 1 sintered gear
OE	with RIVET NUTS
OF	OCPH with RIVET NUTS & atleast 2 brass gears
OG	OCPHS with RIVET NUTS & bush dia 12 mm
OH	OCPSiHS with RIVET NUTS & std 12 mm bush atleast 1 sintered gear

GBB

BA	standard

GBC

CA	standard

GBL

LA	standard
LB	1st few plastic

GB3

3A	standard
3B	1st few plastic

GB8

8A	standard
8B	1st few plastic

GB4

4A	standard
4B	1st few plastic

GB7

7A	standard
7B	1st few plastic

GBU/V

VA	standard
VR	with mounting adapter
VB	with Round bottom plate
UA	standard
UR	with mounting adapter

GBW

WA	standard

GBX

XA	standard

▲: Motor CW & O/P CW ▼: Motor CW & O/P ACW

Gear Ratio

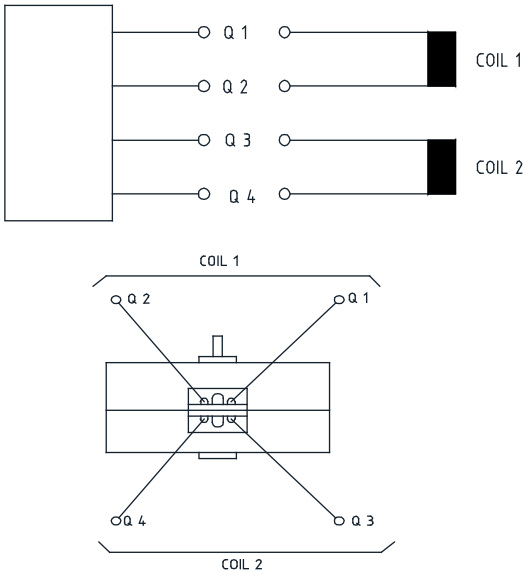
Transmission Ratio	Ordering Data	Series GB2	GB5P	GB5H	OC38	GB3	GB7	GB8	GBU GBV	GB4	GBW	GBX	GBB	GBC
25/6	04A	▼							▼	▲				
4.07	04B													▲
5	05A	▼							▼	▲				
5.54	05G													▲
6	06A	▼				▲			▲	▲			▲	
25/4	06X	▼	▲				▼							
20/3	06Y	▼	▲				▼							
6.99	06B													▲
25/3	08A	▼	▲				▲	▲	▲	▲	▲			
75/8	09A				▲									
9.5	09G													▲
9.7	09X													
10	10A	▼	▲		▲	▲	▲	▲			▲			
10.19	10B													▼
125/12	10X	▼								▲				
100/9	11A						▲							
11.25	11X													
11.64	11Y													
12	12A	▼								▲				
12.5	12X	▼	▲	▲					▲	▲				
40/3	13A	▼								▲				
13.85	13G													▼
14.55	14A													
15	15A	▼	▲	▲	▲	▼	▲	▲	▲	▲	▲		▼	
50/3	16A	▼	▲	▲		▼	▼	▲	▲	▲	▲			
17.45	17A													
17.47	17B													▼
18	18A				▲									
75/4	18X	▼							▼	▲				
20	20A	▼	▲	▲		▼	▼	▲	▲	▲	▲		▼	
125/6	20X		▼							▼				
21.82	21A													
23.75	23G													
25	25A	▼	▼	▼	▼	▼	▼	▼	▲	▼		▲		
25.48	25B													▲
30	30A	▼	▼	▼	▼		▼	▼	▼	▼	▼			
125/4	31A		▼	▼			▼			▼				
100/3	33A	▼	▼	▼		▼	▼	▼	▼	▼	▼			
34.64	34G													▲
35.26	35A								▼		▼			
75/2	37A	▼	▼		▼	▼			▼		▼		▲	
40	40A	▼	▼	▼		▼	▼	▼	▼	▼	▼			
125/3	41A	▼	▼	▼			▼	▼		▼				
42.31	42A													
43.68	43A													▲
400/9	44A	▼					▼			▼				
45	45A	▼	▼	▼										
375/8	46K								▼					
50	50A	▼	▼	▼	▼	▲	▼	▼	▼	▼	▼	▼	▲	
52.89	52A													
55.55 H	55H		▼											
500/9	55A						▼							
59.38	59G													▲
60	60A	▼	▼	▼		▲	▼	▼	▼	▼	▼	▼		
125/2	62A		▼	▼		▲	▲			▼				
62.5 H	62H		▼											
63.47	63A													
63.71	63B													▼
66.12	66A													
200/3	66X	▲	▼	▼			▼	▼	▼	▼	▼	▼		
72	72A				▼									
72.92	72W													
75	75A	▼	▼	▼	▲	▼			▼		▼	▼		
79.34	79A													
80	80A	▲	▲	▲	▲		▼	▼		▼	▼	▼		
250/3	83A	▲	▼	▼		▲	▼		▼	▲	▼	▼		
86.59	86G													▼
89.28	89H		▲											
90	90A	▲	▼	▼										
93.75	93A	▲							▼					
100	10B	▲	▼	▼	▼	▼	▲	▲	▼	▲	▼	▼		
102.85	10U													
109.21	10G													▼
1000/9	11B	▲					▲							
119 H	11H		▲											
120	12B	▲	▲	▲			▲	▲	▲	▲	▼	▲		
123.42	12U													

Transmission Ratio	Ordering Data	Series GB2	GB5P	GB5H	OC38	GB3	GB7	GB8	GBU GBV	GB4	GBW	GBX	GBB	GBC
125	12V	▲	▲	▲	▼	▼	▲	▲	▼	▲	▼	▼	▼	
133 H	13K		▲											
400/3	13B	▲								▲	▲		▲	
1250/9	14B													
148.38	14G													▼
150	15B	▲	▲	▲	▼	▼	▲	▲	▲	▲	▲	▲		
154.27	16B													
159.27	16C													▲
160.71	16K													
160.71 H	16H		▲											
500/3	17B	▲	▲	▲	▼	▼	▲	▲	▲	▲	▲	▲		
180	18B	▲	▲	▲			▲		▲	▲	▲	▲		
182.3	18W											▲		
185.12	18U		▲											
375/2	18V	▲	▲	▲	▼		▲		▲	▲	▲	▲		
192.84	19B													
200	20B	▲	▲	▲		▲	▲	▲	▲	▲	▲	▲		
205.69	21B													
208.33	20K													
208.33 H	20H		▲											
216.47	21G													▲
2000/9	22B							▲						
225	23B	▲	▲	▲			▲	▲	▲	▲	▲	▲		
235	23A													
240	24B	▲			▲	▲				▼				
246.83	24U													
250	25B	▲	▲	▲			▲	▼	▼	▲	▼	▲	▲	
250 H	25H		▲											
257.12	25U													
273.43	27A													▲
276.7	27K													
2500/9	27B	▲					▼	▼						
297.6	29K													
297.6 H	29H		▼											
300	30B	▲	▲	▲			▲	▼	▼	▲	▼	▲	▲	
308.54	31B													
312.5	31W												▲	
1000/3	33B	▲	▲	▲			▲	▼	▼	▲	▼	▲	▲	
360	36B	▲									▼			
371.1	37G													▲
375	37B	▲	▲	▲	▲	▼	▼	▼	▲	▼	▼	▲		
385.67	38B													
398.19	39A													▼
400	40B	▲	▼	▼						▲	▼			
411.39	41B													
1250/3	42B	▲								▼				
450	45B	▲	▼	▼			▼	▼		▼		▲		
455.73	45W											▼		
462.81	46B													
468.75	46U	▲												
482.09	48B													
500	50B	▲	▼	▼			▼	▼	▼	▼		▲		
514.23	51B													
541	54G													▼
5000/9	55B							▼						
562.5	56B	▼												
578.51	57B													
600	60B	▲	▼	▼			▼	▼	▲	▼	▼	▲		
617.08	61B													
625	62B	▼								▲				
642.79	64B													
2000/3	66B	▼	▼	▼							▼			
682.61	68A													▼
687.5	68B	▼												
720	72B													
740.5	74B													
750(2M)	75B	▼	▼	▼			▲	▲	▲		▼	▼	▼	
771.35	77B													
781.25	78W												▼	
812.5	81B	▼												
2500/3	83B	▼	▼	▼			▲			▲		▼		
875	87B	▼					▲							
900	90B	▼	▼					▲				▼		
925.62	92B													
927.7	92G													▼
1875/2	93B	▼					▲							
964.19	96B													

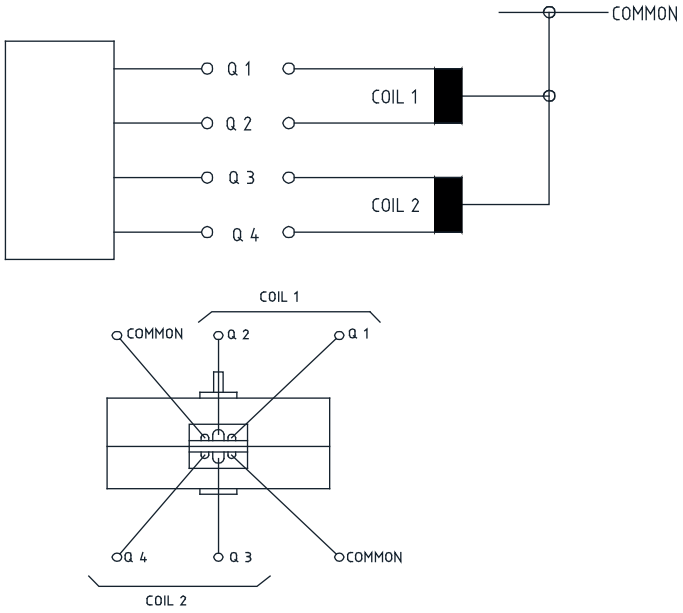
Transmission Ratio	Ordering Data	Series GB2	GB5P	GB5H	OC38	GB3	GB7	GB8	GBU GBV	GB4	GBW	GBX	GBB	GBC
995.48	99A													▲
1000	10C	▼	▲	▲		▲	▲	▲		▲		▼		
10000/9	11C						▲							
1125(3M)	11P	▼	▲											
1139.32	11W												▼	
1157.02	11Q						▲							
1200	12C	▼	▲	▲		▲	▲	▲		▲	▼	▼		
1205.23	12P													
1250	12Q	▼	▲	▲						▼				
1352.95	13G													▲
1500	15C	▼	▲	▲		▲	▼	▼		▼	▼	▼		
5000/3	16C	▼								▼				
1687.5	16P	▲												
1706.54	17A													▲
1800	18C	▼								▼				
1875	19C	▼	▲	▲		▲	▼			▼				
1953.12	19W												▲	
2000	20C	▼	▼	▼		▼	▼	▼		▼	▼	▼		
6250/3	21C									▼				
2250	22C	▲								▼				
2319	23H													▲
2400	24C	▼								▼				
2500	25C	▼	▼	▼			▼				▼	▼		
2625	26C	▼												
2700	27C	▲												
2812.5	28C	▲												
3000	30C	▼	▼	▼		▼	▼			▼				
3375	33C	▲								▼				
3600	36C	▲								▲				
3750	37C	▲	▼	▼			▲			▼				
4000	40C	▲												
4218.75	42C	▲												
4500	45C	▲								▲				
4687.5	46C	▲												
5000	50C	▲								▲				
5400	54C	▲								▲				
5625	56C	▲	▲				▼							
6000	60C	▲												
6250	62C		▲	▲										
7500	75C	▲	▲	▲						▲				
9000	90C	▲												
10000	10D	▲								▲				
11250(30M)	11D	▼					▲							
13500(36M)	13D	▼												
15000	15D	▲												
16500	16E						▲							
16875	16D	▼												
18000	18D	▼												
18750	18L	▼												
22500(1H)	22D	▼	▼				▲							
27000(1.2H)	27D	▼												
300001.33H)	30D	▼												
33750(1.5H)	33D	▼												
40500(1.8H)	40D	▼												
45000(2H)	45D	▼	▲				▼							
67500(3H)	67D	▲	▲											
90000(4H)	90D	▲	▲											
101250(5H)	10E	▲												
108000(4.8H)	10H		▼											
112500(5H)	11E	▲												
135000(6H)	13E	▲	▼											
162000 (7.2H)	16E		▼											
180000(8H)	18E	▲												
270000(12H)	27E	▼	▼											
337500(15H)	33E	▼												
360000(16H)	36E	▼												
405000(18H)	40E	▼												
450000(20H)	45E	▼												
540000(24H)	54E	▼	▲											
648000(28.8H)	64E	▼												
675000(30H)	30E	▼												
720000(32H)	72E	▼												
1080000(48H)	10F	▼												
1620000(72H)	16F	▲												
3780000(168H)	37F	▼												

Stepper Motor Connections

Bipolar winding (2 phase stepper motor)



Unipolar winding (4 phase stepper motor)



Unipolar winding (4 phase stepper motor) excitation sequences

	Wave Drive				Normal full step				Half Step Drive							
Phase	1	2	3	4	1	2	3	4	1	2	3	4	5	6	7	8
A	●				●			●	●						●	●
B		●			●	●			●	●	●					
$\underline{A}$			●			●	●				●	●	●			
$\underline{B}$				●			●	●						●	●	●

Intermittent Duty Cycle

Intermittent Duty Cycle

In an application where a specific speed-torque point is required but the duty cycle is only 10% (the motor runs for 6 seconds every minute), a smaller motor may work for the application in comparison to the motor required for continuous operation. Since the application is intermittent duty there will be less heat to dissipate, generating space, weight, and cost savings due to the use of a smaller motor.

Often, a motor's duty cycle is not easily determined because it is dependent on the end user and how they operate the device powered by the motor. In these cases, a "worse-case" duty cycle needs to be assumed so that the motor can safely run without overheating. Continually overheating a motor will lead to deterioration of the insulation and eventual failure.

MECHTEX Offerings

Mechtex offers motors with different duty cycles to cater continuous & intermittent applications as follows,
100 % ED, 80 % ED, 60 % ED, 40 % ED, 30 % ED, 20 % ED, 10 min, 5 min

These intermittent duty cycles provides improved torque characteristics in the same motor size with same speed & frequency. Hence selection of duty cycle must be done in close collaboration between end user & factory.

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.

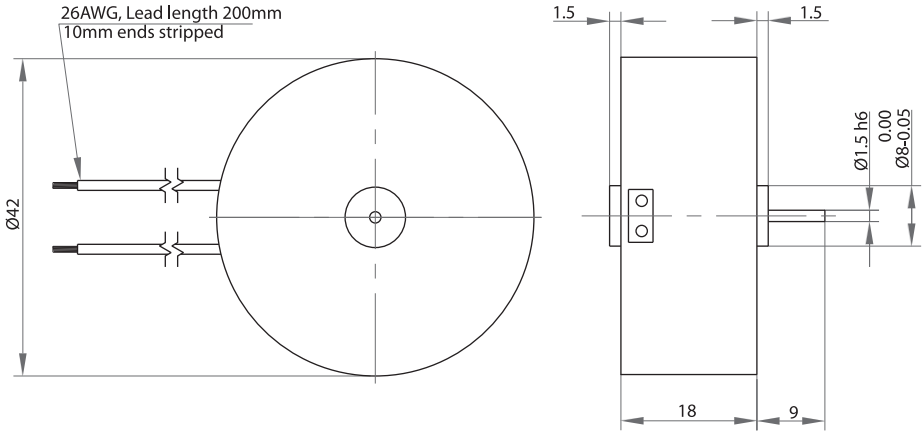
Standard Data

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	
Rated frequency	**Hz**	**50**	**60**
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.)

00C N B1 S C

- C — Direction -CW
- S — Mounting -with screw clip
- B1 — Voltage -110V 50 Hz
- N — Approval - standard
- 00C — Motor -MT0 series

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 priovided with screw or snap clip for fixing.

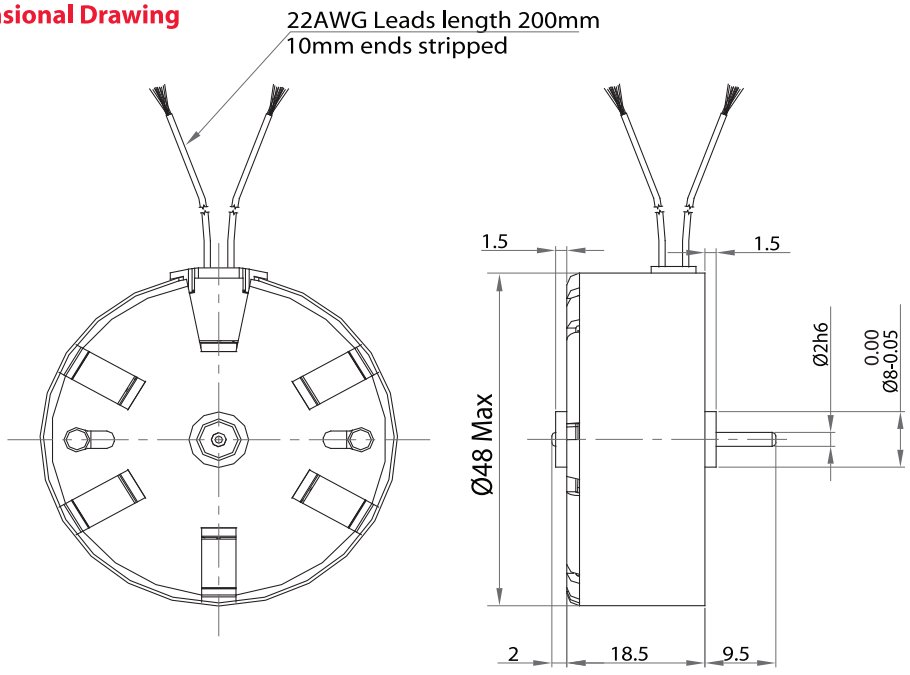
Standard Data

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

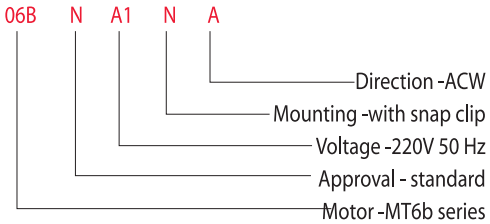
Technical data

Standard Motor Voltages	V	12, 24, 110, 230 …….. (others on request)	
Tolerance of voltage	%	-10...+15% of rated voltage	
Duty cycle	%	100	
Rated frequency	**Hz**	**50**	**60**
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.

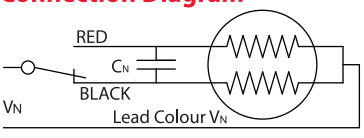
Standard Data

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

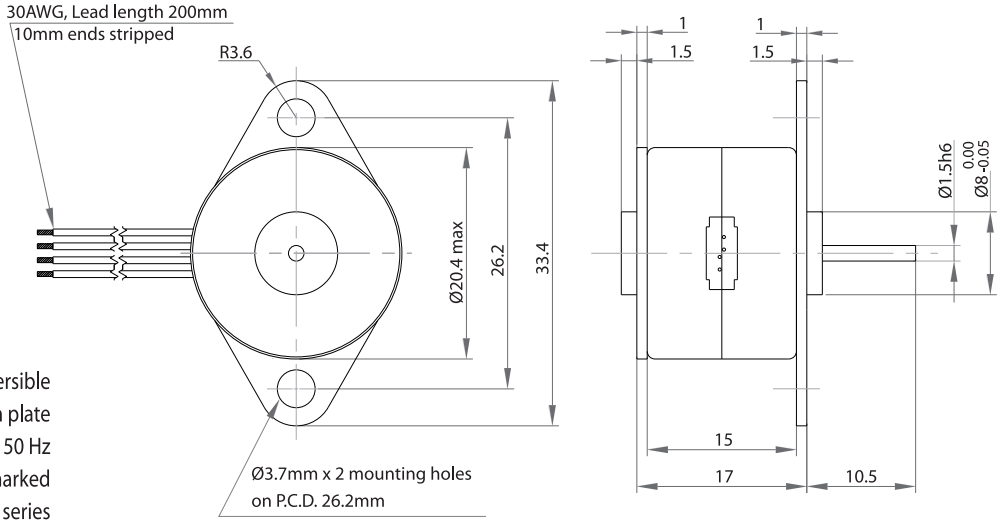
Technical data

Standard Motor Voltages (V_N)	V	12	24
Operation capacitor (50 Hz) C_N	µF/VAC	10/20	2.2/40
Operation capacitor (60 Hz) C_N	µF/VAC	10/20	2.2/40
Lead colour (V_N)		Grey	Blue
Tolerance of Voltage	%	-10...+15% of rated voltage	
Duty Cycle	%	100	
Rated Frequency	**Hz**	**50**	**60**
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	

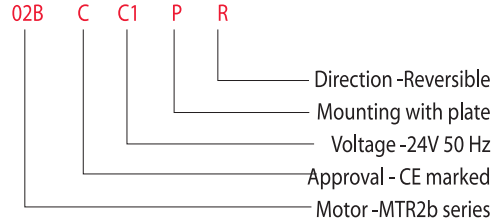
Connection Diagram



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. Electrial 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.

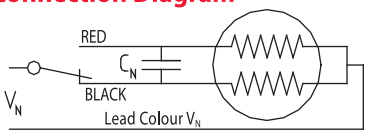
Standard Data

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

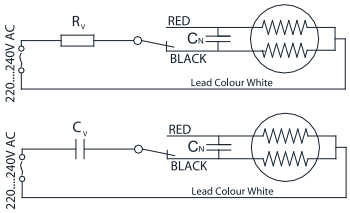
Standard Motor Voltages(V_N)	V	12	24	48	110	230*
Operation capacitor(50 Hz)C_N	µF/VAC	10/ 20	3.3/ 50	0.82/ 100	0.15/ 200	With add on units
Operation capacitor (60Hz) C_N	µF/VAC	10/ 20	3.3/ 50	0.82/ 100	0.15/ 200	
Lead colour (V_N)		Grey	Blue	Brown	White	White
Tolerance of voltage	%	-10...+15% of rated voltage				
Duty cycle	%	100				
Rated frequency	**Hz**	**50**			**60**	
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



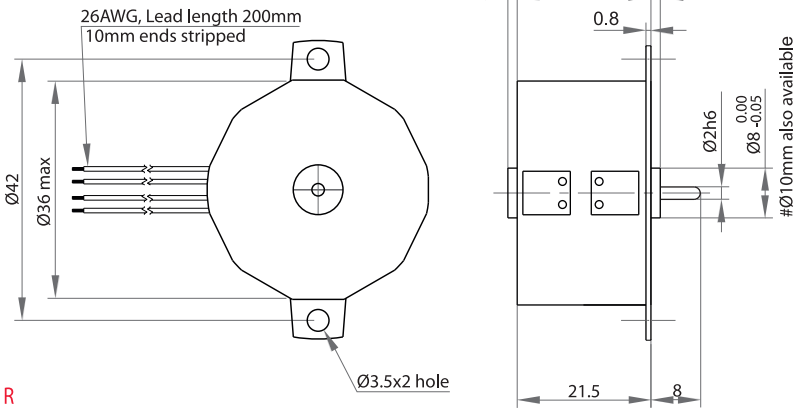
Add on units for 220* & 240* V

220.....240 V (V_N motor 110V)



Unit	220V	240V
R_V (1.5W) 50/60Hz	8.2 KΩ	10 KΩ
C_V (200 VAC) 50Hz	0.18 µF	0.15 µF
C_V (200 VAC) 60Hz	0.15 µF	0.12 µF

Dimensional Drawing



Ordering Data (eg.)

03A N A1 P R

- R – Direction -Reversible
- P – Mounting -with mounting plate
- A1 – Voltage -220V 50 Hz
- N – Approval - standard
- 03A – Motor -MTR3a series

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. Electical 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.

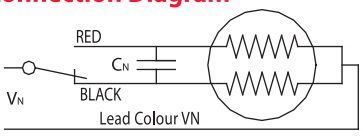
Standard Data

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

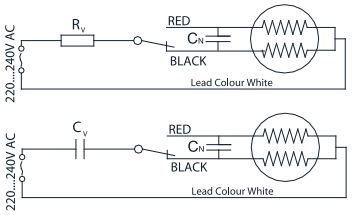
Standard Motor Voltages(V_N)	V	12	24	48	110	230*
Operation capacitor(50 Hz)C_N	µF/VAC	15/ 20	3.9/ 50	1.0/ 100	0.22/ 200	With add on units
Operation capacitor (60Hz) C_N	µF/VAC	15/ 20	3.9/ 50	1.0/ 100	0.22/ 200	
Lead colour (V_N)		Grey	Blue	Brown	White	White
Tolerance of voltage	%	-10...+15% of rated voltage				
Duty cycle	%	100				
Rated frequency	**Hz**		**50**		**60**	
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



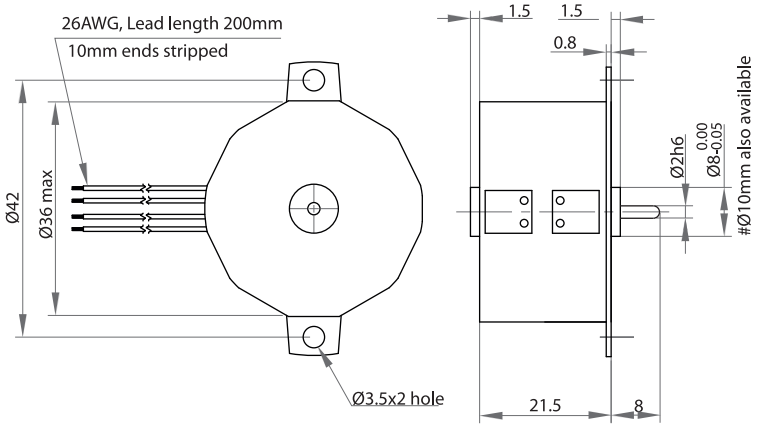
Add on units for 230* V

220….240 V (V_N motor 110V)



Unit	220V	240V
R_V (1.5W) 50/60Hz	10 K Ω	10 K Ω
C_V (200 VAC) 50 Hz	0.22 µF	0.22 µF
C_V (200 VAC) 60 Hz	0.18 µF	0.18 µF

Dimensional Drawing



Ordering Data (eg.)

03B C C1 N R

- R — Direction Reversible
- N — Mounting with Snap clip
- C1 — Voltage 24V 50 Hz
- C — Approval - CE marked
- 03B — Motor MTR3b series

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. Electical 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.

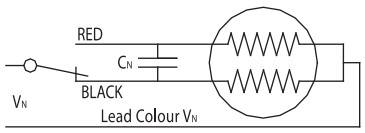
Standard Data

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

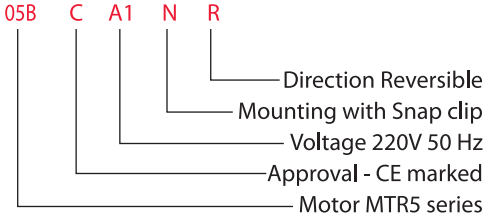
Technical data

Standard Motor Voltage (V_N)	V	12	24	48	110	230
Operation capacitor (50 Hz)C_N	µF/VAC	22/20	6.8/40	1.5/100	0.27/200	0.068/400
Operation capacitor (60 Hz)C_N	µF/VAC	22/20	6.8/40	1.5/100	0.27/200	0.068/400
Lead colour (V_N)		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		

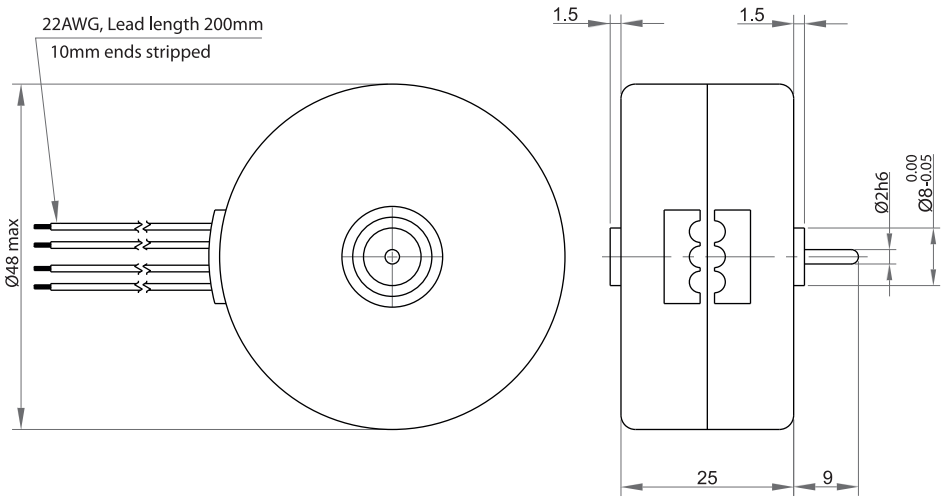
Connection Diagram



Ordering Data (eg.)



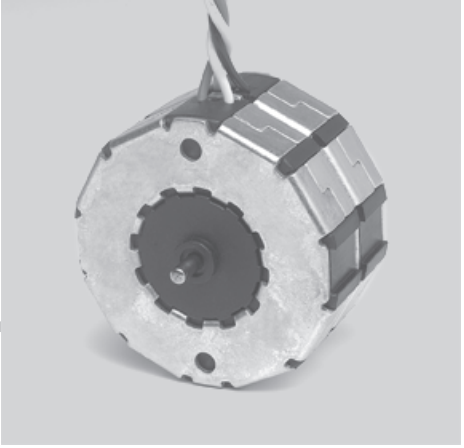
Dimensional Drawing



MECHTEX

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.

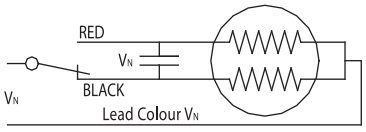
Standard Data

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

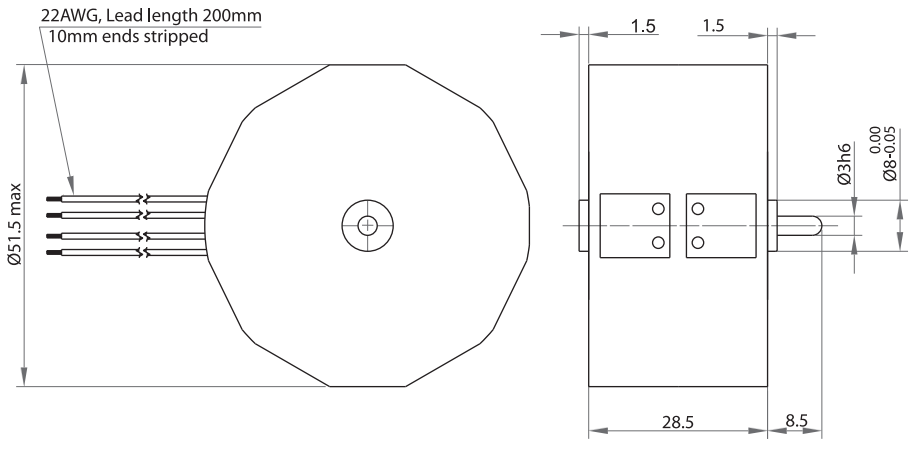
Technical data

Standard Motor Voltages (V_N)	V	24	48	110	230
Operation capacitor(50 Hz) C_N	µF/VAC	10/50	2.2/100	0.39/250	0.1/400
Operation capacitor (60Hz) C_N	µF/VAC	8.2/50	1.8/100	0.33/250	0.082/400
Lead colur (V_N)		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		0.94		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



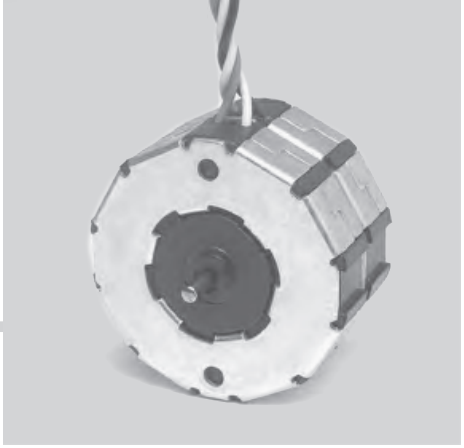
Dimensional Drawing



Ordering Data (eg.)

04A C A1 N R

- R — Direction Reversible
- N — Mounting with Snap clip
- A1 — Voltage 220V 50 Hz
- C — Approval - CE marked
- 04A — Motor MTR4a series



Motor Series **MTR4b**

Reversible Synchronous Motor - 500 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

MTR4b 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.

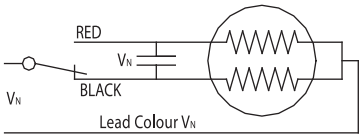
Standard Data

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	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

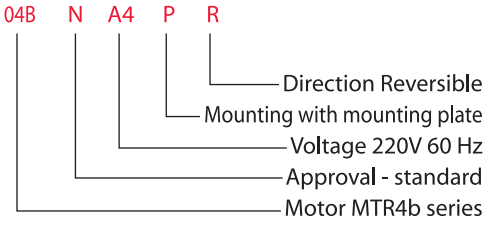
Technical data

Standard Motor Voltages (V_N)	V	24	48	110	230
Operation capacitor(50 Hz) C_N	µF/VAC	10/50	2.7/100	0.47/250	0.12/400
Operation capacitor (60Hz) C_N	µF/VAC	8.2/50	2.2/100	0.39/250	0.1/400
Lead colour (V_N)		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	1.41		1.57	
Speed	Rpm	500		600	
Running torque at rated voltage	Ncm	2.7		2.5	
Power consumption at rated voltage	W	3.6		3.7	
Detent Torque	Ncm	0.46			

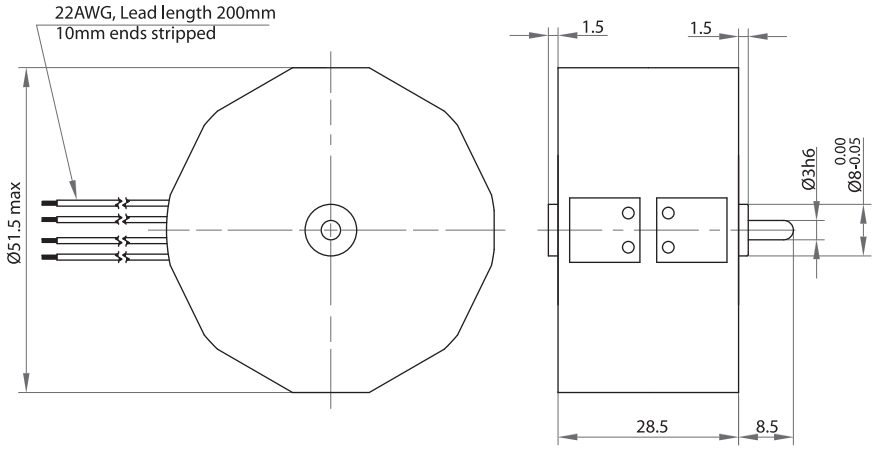
Connection Diagram



Ordering Data (eg.)



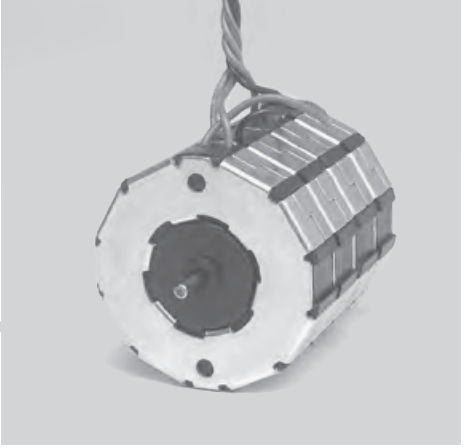
Dimensional Drawing



MECHTEX

Motor Series **MTRD4b**

Reversible Synchronous Motor - 500 RPM



Application

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

Design

MTRD4b 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.

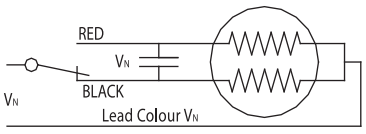
Standard Data

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	400
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 57 mm

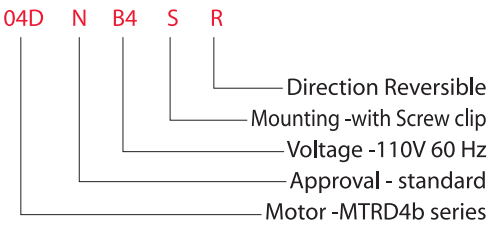
Technical data

Standard Motor voltage (V_N)	V	24	48	110	220
Operation capacitor (50 Hz) C_N	µF/VAC	18/50	4.7/100	0.82/250	0.22/500
Operation capacitor (60 Hz) C_N	µF/VAC	15/50	3.9/100	0.68/250	0.18/500
Lead colour (V_N)		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		2.77		2.95
Speed	Rpm		500		600
Running torque at rated voltage	Ncm		5.1		4.5
Power consumption at rated voltage	W		7		7.5
Detent torque	Ncm		0.8		

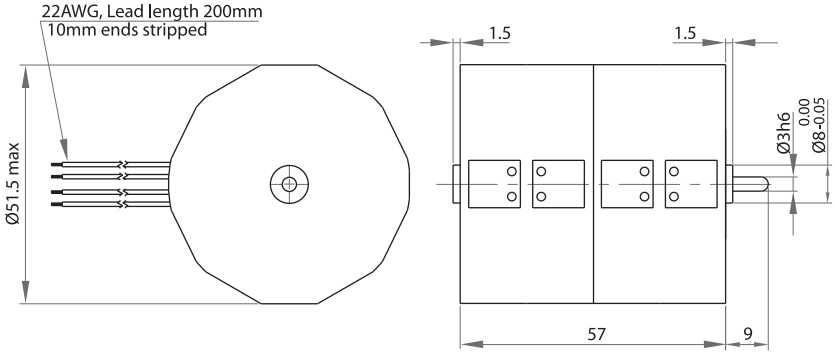
Connection Diagram



Ordering Data (eg.)



Dimensional Drawing



Motor Series **MTR7a**

Reversible Synchronous Motor - 250 RPM

Application

Reversible power drive for actuators, pumps, label printing machines, medical and optical equipment, office machines, automatic vending machines, machine automation

Design

The MTR7a reversing synchronous motor with permanent magnet rotor is electrically reversible and due to its unique stator design it is moderately priced. The rotating field is produced with a phase-shift capacitor and double-stator with coils thus ensuring extremely quiet running. Long life is guaranteed by the robust design (sintered bronze bearings,self centering type) The MTR7a is operated with single-phase AC current.

The same motor version can be used at 50Hz and 60Hz.

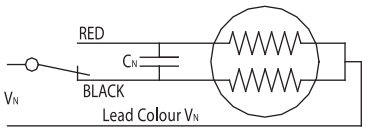
Standard Data

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	300
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. 59 x 35 mm

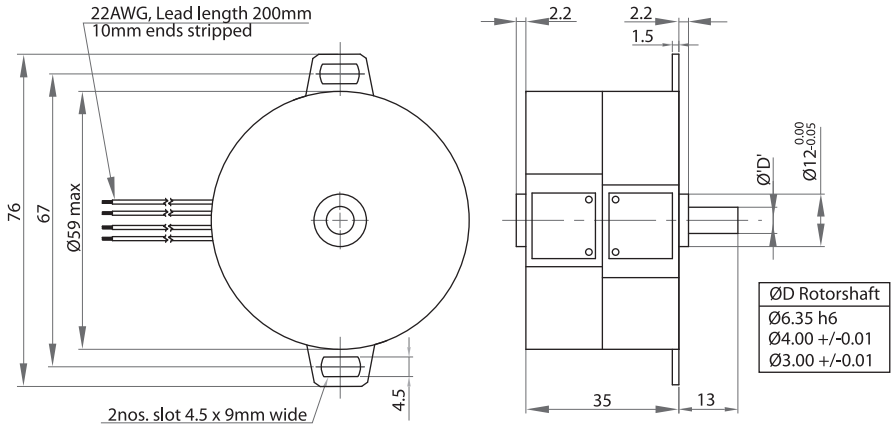
Technical data

Standard Motor voltage (V_N)	V	12	24	48	110	230
Operation capacitor (50 Hz)C_N	µF/VAC	56/40	15/50	3.9/100	0.68/250	0.18/400
Operation capacitor (60 Hz)C_N	µF/VAC	39/40	10/50	2.7/100	0.47/250	0.12/400
Lead colour (V_N)		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			2.14		1.94
Speed	Rpm			250		300
Running torque at rated voltage	Ncm			7.2		6.2
Power consumption at rated voltage	W			5.8		5
Detent torque	Ncm			1.3		

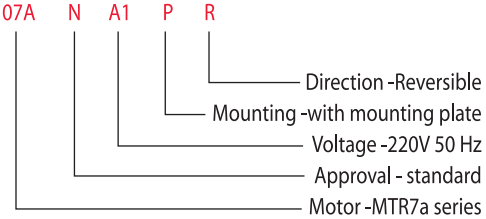
Connection Diagram



Dimensional Drawing



Ordering Data (eg.)



Motor Series **MTR8c**

Reversible Synchronous Motor - 375 RPM

Application

Reversible power drive for actuators, pumps, label printing machines, medical and optical equipment, office machines, automatic vending machines, machine automation.

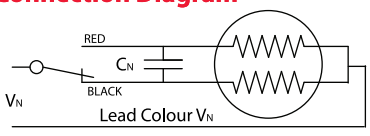
Design

The MTR8c reversing synchronous motor with permanent magnet rotor is electrically reversible and due to its unique stator design it is moderately priced. The rotating field is produced with a phase-shift capacitor and double-stator with coils thus ensuring extremely quiet running. Long life is guaranteed by the robust design (sintered bronze bearings; self-centering type). The MTR8c is operated with single-phase AC current.

The same motor version can be used at 50Hz and 60Hz

Various windings of motor are available that are tailored to specific requirements. Only some types are listed.

Connection Diagram



Standard Data

Motor type		Reversible synchronous
Ambient temperature operation	°C	-15...+55
Ambient temperature storage	°C	-20...+100
Thermal class	°C	130
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	450
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 & self centering
External dimensions		dia. 66.4 x 40.4 mm

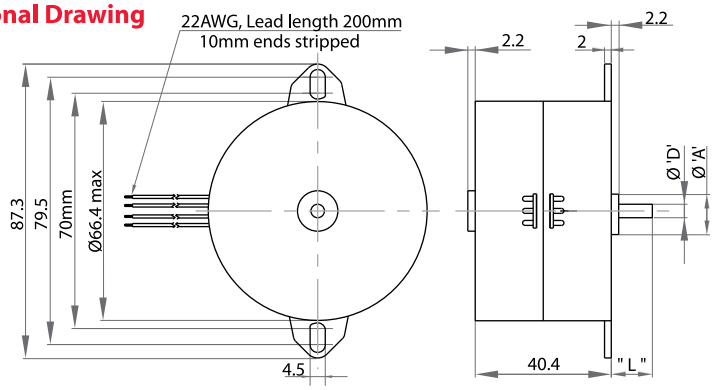
Technical data

Standard Motor voltage (V_N)	V	24	110	230	
Operation capacitor (50 Hz)C_N	µF/VAC	30/63	1.33/250	0.27/500	
Operation capacitor (60 Hz)C_N	µF/VAC	30/63	1.33/250	0.27/500	
Lead colour (V_N)		Blue	White	Yellow	
Tolerance of voltage	%	-10... +15% of rated voltage			
Duty Cycle	%	100			
Rated frequency	**Hz**	**50**		**60**	
Speed	Rpm	375		450	
Power consumption at rated voltage	W	10.5		8.5	
Running torque at rated voltage	Ncm	9.5		9.7	
Intermittent Duty cycle	%	90 (90min)	70 (60 min)	90(90 min)	70 (60min)
Power output at V_N	W	4.6	7.3	4.9	8
Power consumption at V_N	W	11.5	18	12.5	20
Running torque at rated voltage	Ncm	12	18.5	10.5	17
Detent torque	Ncm	2			

Technical Data (Strong magnet)

Duty cycle	%	20 (10min)	10 (5min)	20 (10min)	10 (5min)
Power consumption at V_N	W	25	32	25	32
Running torque at rated voltage	Ncm	27	34	21	30
Detent torque	Ncm	7.5			
Thermal Protection		Possible @ required voltage +/- 5 °C			

Dimensional Drawing

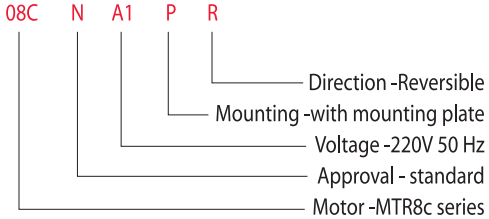


Ø'A'
Ø12 -0.10/-0.00(Std)
Ø10* -0.10/-0.00
Ø14* -0.10/-0.00
*Upon special request

Ø 'D' Rotorshaft
$Ø4^{-0.016}_{-0.022}$
Ø 3±0.010 (upon special request)

" L "	
L1	12.2
L2	19.2
L3	9.0

Ordering Data (eg.)



Motor Series **MTS2b**

Stepper Motor 15°

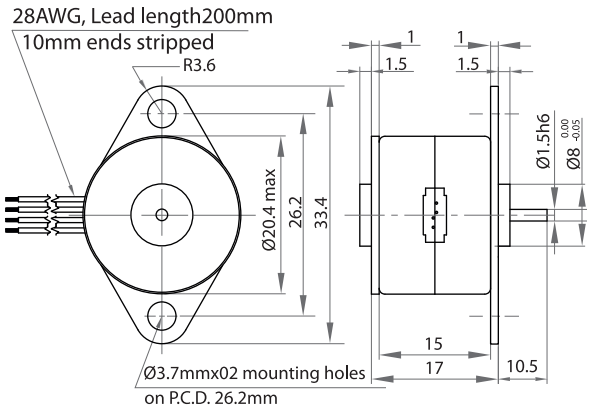
Standard Data

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^2		0.3		

Dimensional Drawing



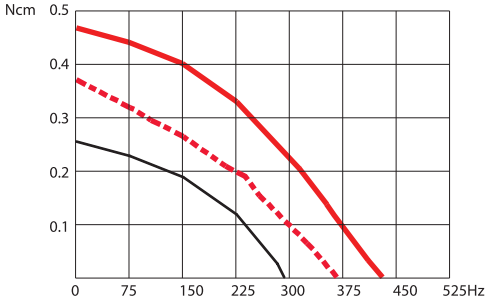
Ordering Data (eg.)

22B N D3 P R

- R – Direction -Reversible
- P – Mounting -with mounting plate
- D3 – Voltage -6V DC
- N – Approval - standard
- 22B – Motor -MTSB2b bipolar

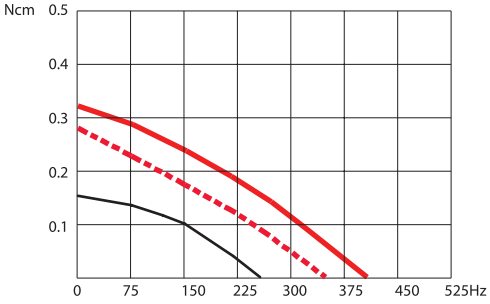
Torque Graphs

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

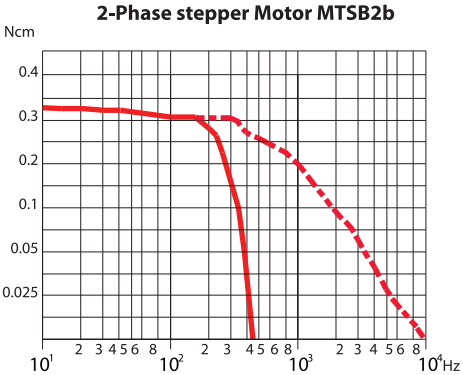


Torque
Duty Cycle
30%
50%
100%

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

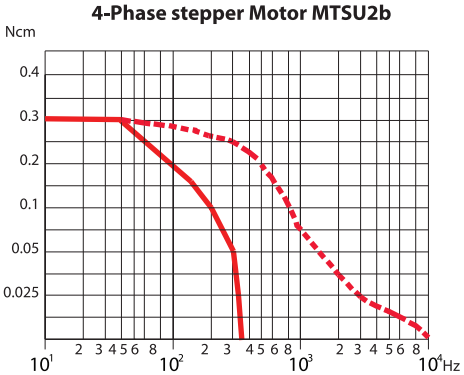


2-Phase stepper Motor MTSB2b



Torque
Start range
Slew range

4-Phase stepper Motor MTSU2b



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)

MECHTEX

Motor Series **MTS3a**

Stepper Motor 7.5°

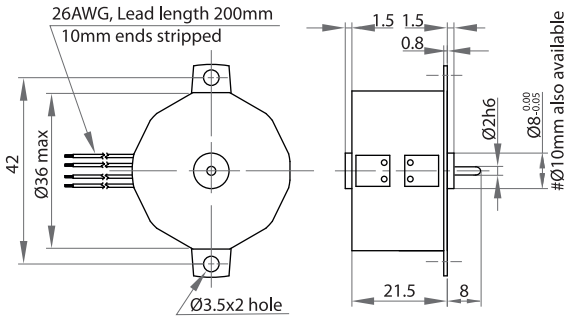
Standard Data

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	gcm²		2.9		

Dimensional Drawing



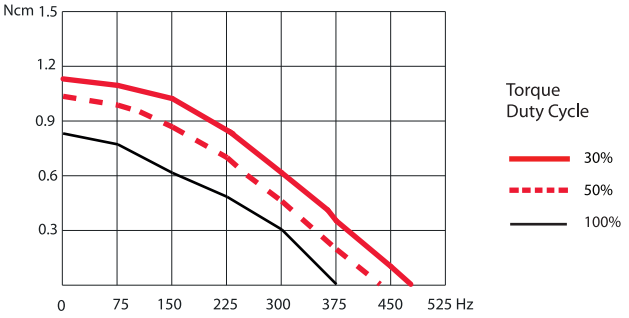
Ordering Data (eg.)

13A N D4 P R

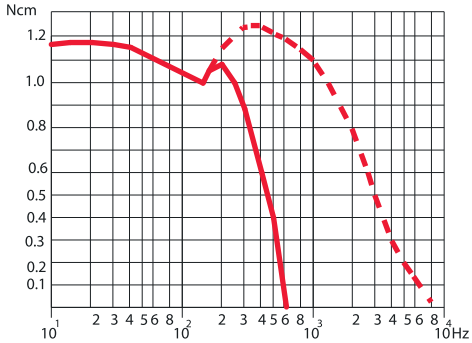
- R – Direction -Reversible
- P – Mounting -with mounting plate
- D4 – Voltage -3V DC
- N – Approval - standard
- 13A – Motor -MTSU3a (unipolar)

Torque Graphs

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

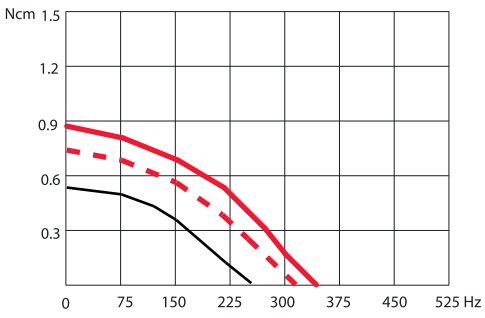


2-Phase stepper Motor MTSB3a

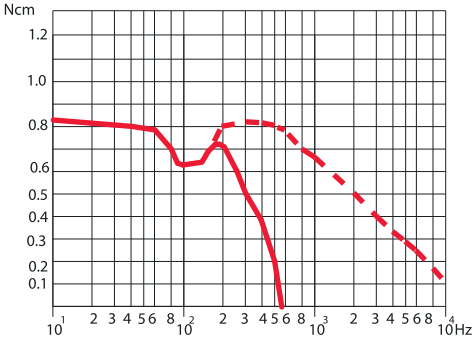


Slew range (pull-out) and start range (pull-in) with constant current power stage (chopper Drive)

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)

Motor Series **MTS3b**

Stepper Motor 15°

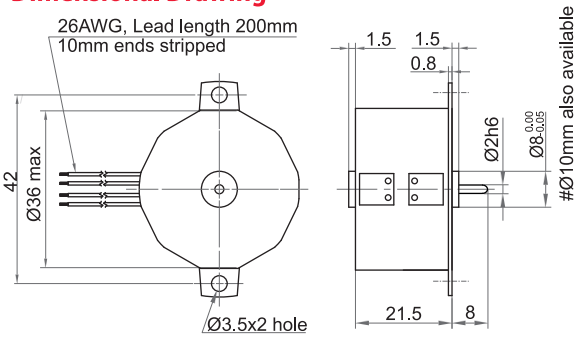
Standard Data

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	gcm²		2.9		

Dimensional Drawing



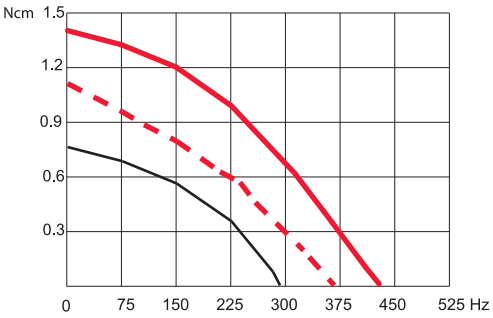
Ordering Data (eg.)

23B C D2 P R

- R — Direction -Reversible
- P — Mounting -with mounting plate
- D2 — Voltage -12V DC
- C — Approval - CE marked
- 23B — Motor -MTSB3b (bipolar)

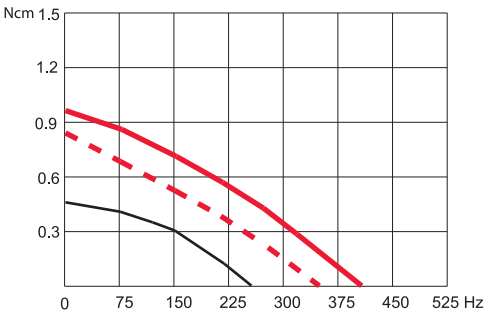
Torque Graphs

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

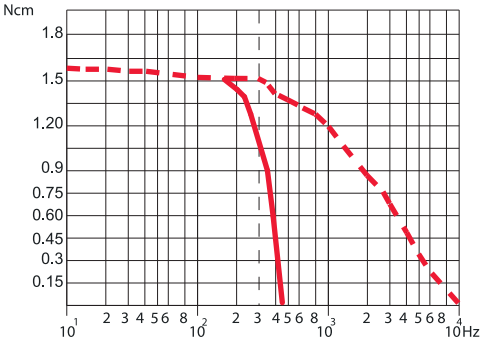


2-Phase stepper Motor MTSB3b

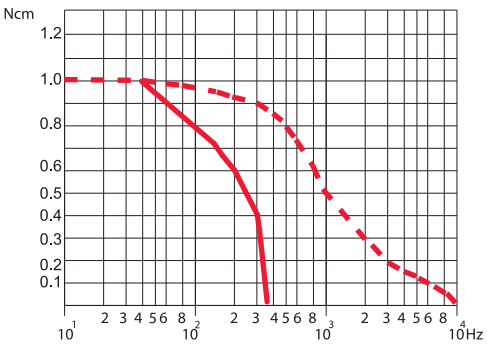
Start range (pull-in) with constant voltage power stage



4-Phase Stepper Motor MTSU3b



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°

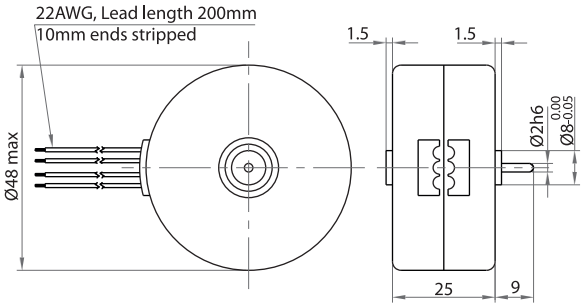
Standard Data

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	gcm²		6		

Dimensional Drawing



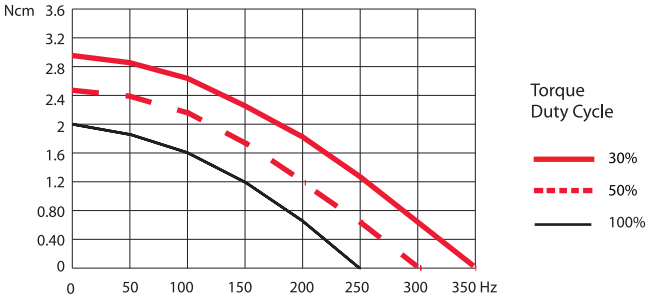
Ordering Data (eg.)

25B C D3 S R

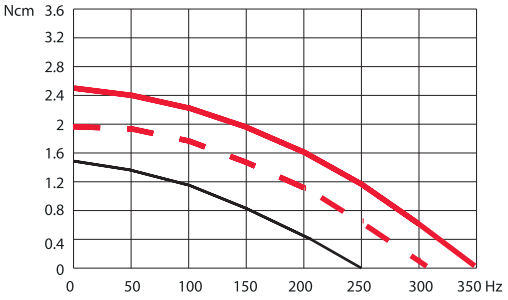
- R — Direction -Reversible
- S — Mounting -with screw clip
- D3 — Voltage -6V DC
- C — Approval - CE marked
- 25B — Motor -MTSB5 (bipolar)

Torque Graphs

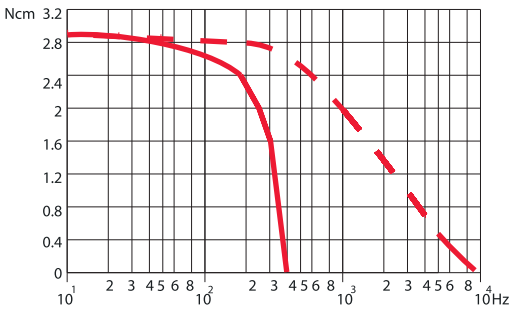
Start range (pull-in) with constant voltage power stage



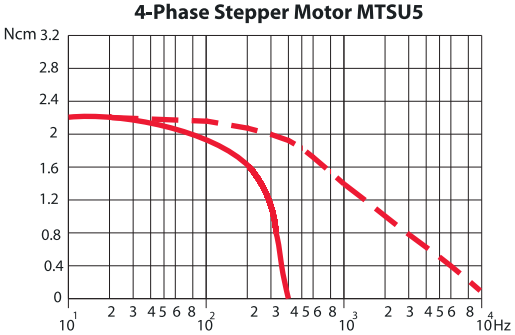
Start range (pull-in) with constant voltage power stage



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)

MECHTEX

Motor Series **MTS4a**

Stepper Motor 7.5°

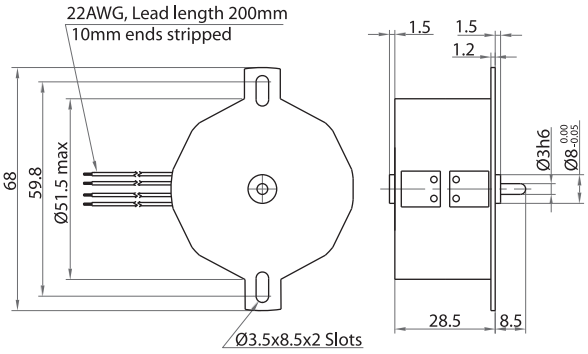
Standard Data

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

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	gcm²		6		

Dimensional Drawing



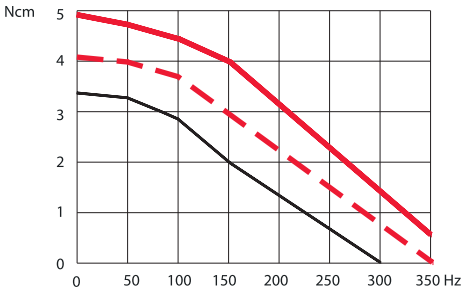
Ordering Data (eg.)

24A C D2 P R

- R – Direction -Reversible
- P – Mounting -with mounting plate
- D2 – Voltage -12V DC
- C – Approval - CE marked
- 24A – Motor -MTSB4a (bipolar)

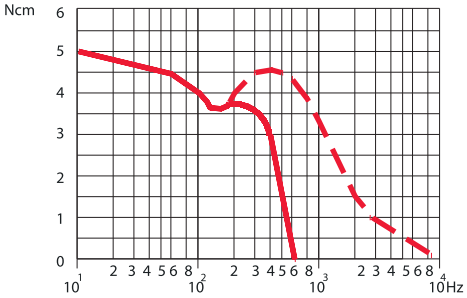
Torque Graphs

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



Torque
Duty Cycle
30%
50%
100%

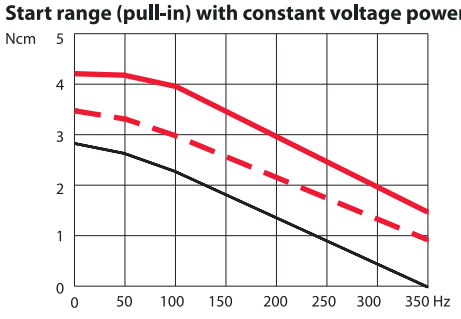
2-Phase stepper Motor MTSB4a



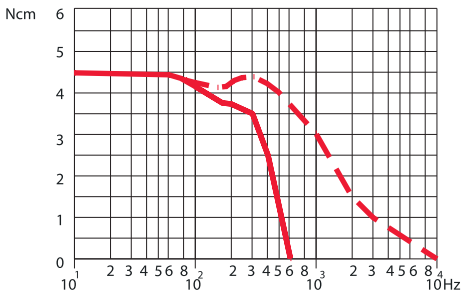
Torque
Start range
Slew range

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°

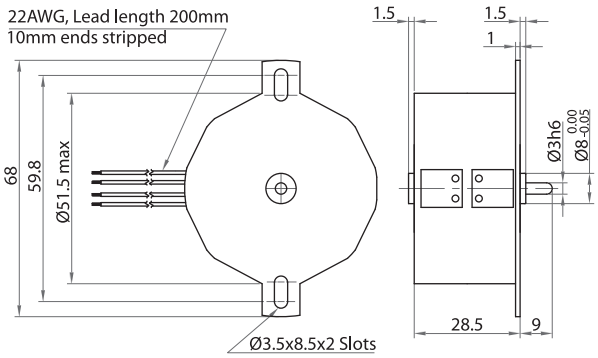
Standard Data

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	gcm²		13		

Dimensional Drawing



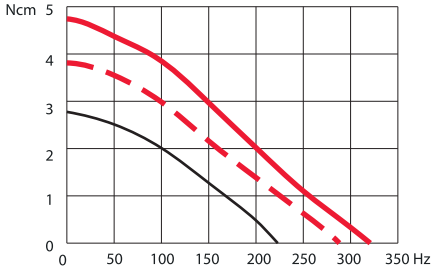
Ordering Data (eg.)

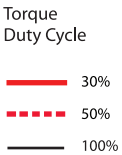
14B C D1 N R

- R — Direction -Reversible
- N — Mounting -with snap clip
- D1 — Voltage -24V DC
- C — Approval - Standard
- 14B — Motor -MTSU4b (unipolar)

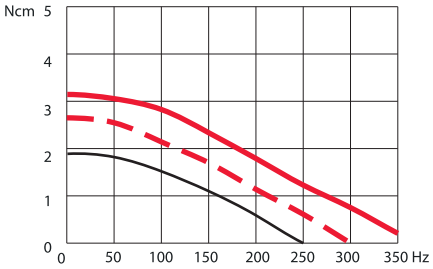
Torque Graphs

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

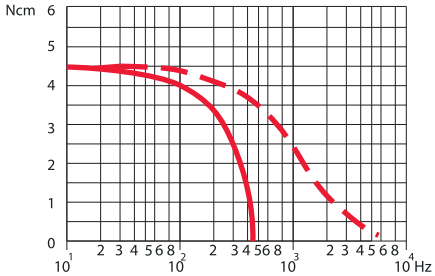




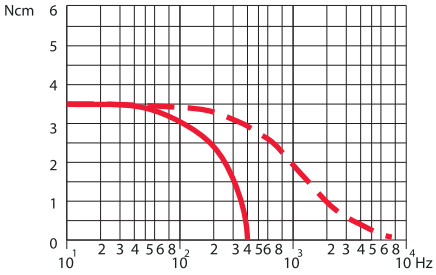
Start range (pull-in) with constant voltage power stage



2-Phase stepper Motor MTSB4b



4-Phase Stepper Motor MTSU4b



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 **MTSD4b**

Stepper Motor 15°

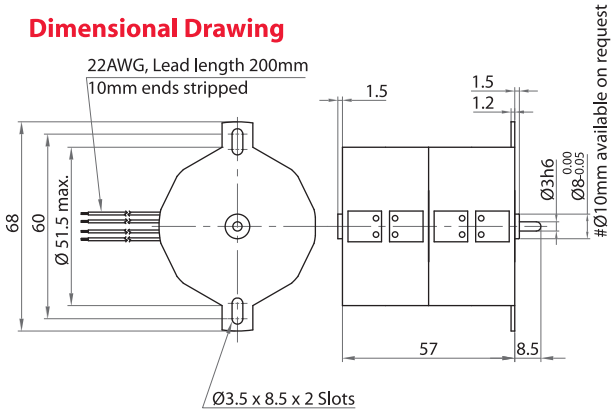
Standard Data

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	gcm²		26		

Dimensional Drawing



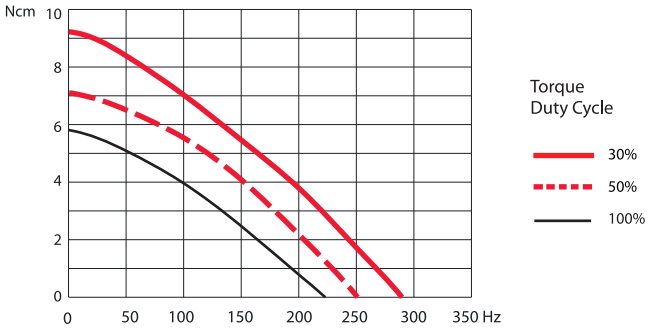
Ordering Data (eg.)

24D N D1 S R

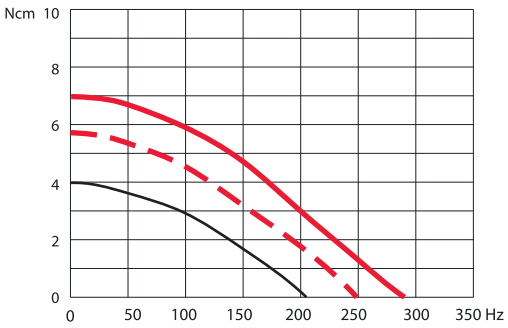
- R — Direction -Reversible
- S — Mounting -with screw clip
- D1 — Voltage -24V DC
- N — Approval - Standard
- 24D — Motor -MTSDB4b (bipolar)

Torque Graphs

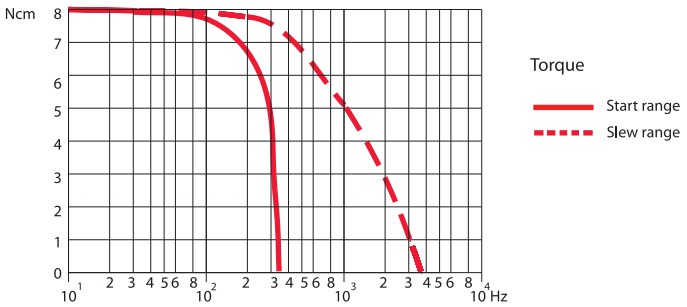
Start range (pull-in) with constant voltage power stage



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

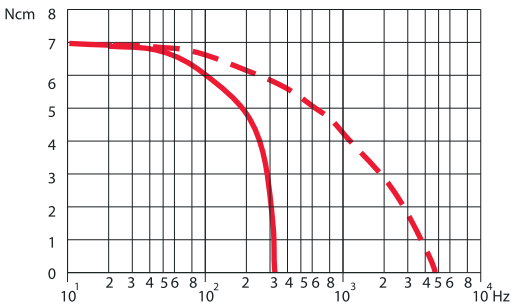


2-Phase stepper Motor MTSDB4b



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

4-Phase Stepper Motor MTSDU4b



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

Motor Series **MTS7a**

Stepper Motor 7.5°

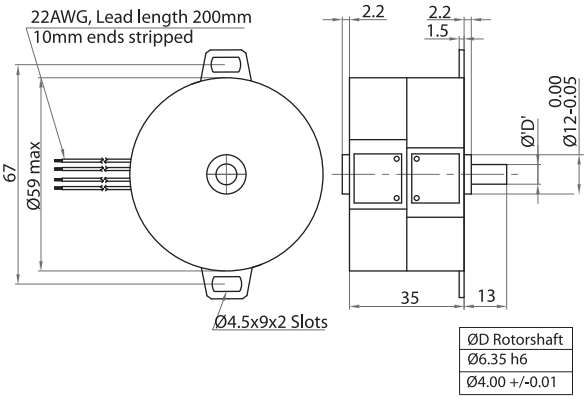
Standard Data

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	300
Mounting		Any position by ears or screw clip

Technical Data

Steps per revolution			48		
Degree/step			7.5		
Winding Type			bipolar		
Standard Voltage	V	6	12	24	
Resistance per winding	Ω	6.8	36	168	
Winding Type			unipolar		
Standard Voltage	V	6	12	24	
Resistance per winding	Ω	10	45	190	
Winding temperature	°C		105 max.		
Holding torque	Ncm	17.1	(MTSB7a)	13	(MTSU7a)
Axial Force	N		5		
Lateral Force	N		12		
Rotor inertia	gcm²		65		

Dimensional Drawing



ØD Rotorshaft
Ø6.35 h6
Ø4.00 +/-0.01

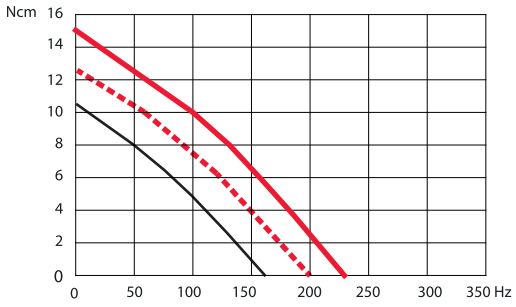
Ordering Data (eg.)

17A N D1 P R

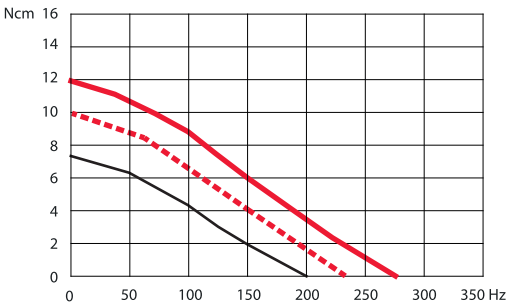
- R — Direction -Reversible
- P — Mounting -with mounting plate
- D1 — Voltage -24V DC
- N — Approval Standard
- 17A — Motor -MTSU7a (unipolar)

Torque Graphs

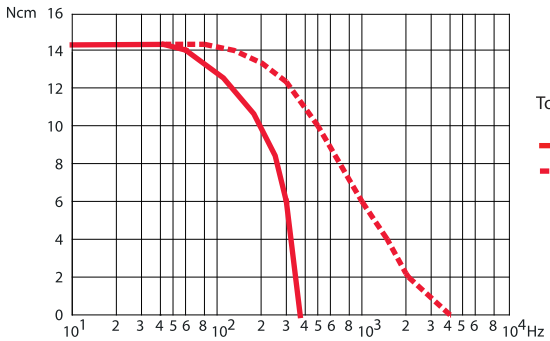
Start range (pull-in) with constant voltage power stage



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

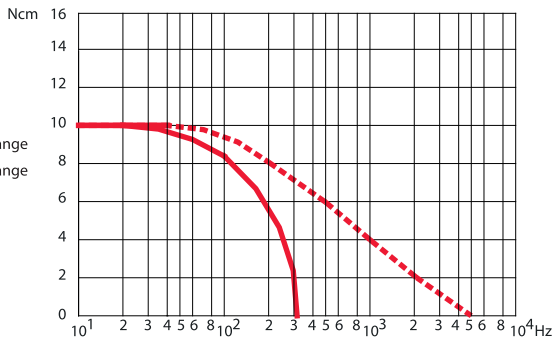


2-Phase stepper Motor MTSB7a



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

4-Phase Stepper Motor MTSU7a



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

Motor Series **MTS8c**

Stepper Motor 11.25°

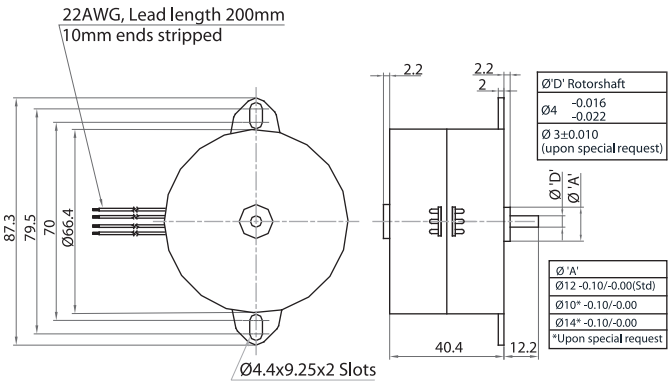
Standard Data

Motor type		Permanent Magnet (PM) stepper motor
Electrical Enclosure	IP	40
Connections		Flexible Leads 22 AWG, 200mm length; ends stripped 10 mm
Duty Cycle		Continuous
Weight	g	450
Mounting		Any position by ears or screw clip

Technical Data

Steps per revolution		32	
Degree/step		11.25	
Winding Type		bipolar	
Standard Voltage	V	4.5	
Resistance per winding	Ω	4.0	
Winding Temprature	°C	130 max	
Magnet Type		(MTSB8c) Regular	(MTSB8c-RE) Strong
Holding torque	Ncm	30	45
Axial Force	N	6	6
Lateral Force	N	15	15
Detent Torque	Ncm	2	7.5
Rotor inertia	gcm²	155	180

Dimensional Drawing

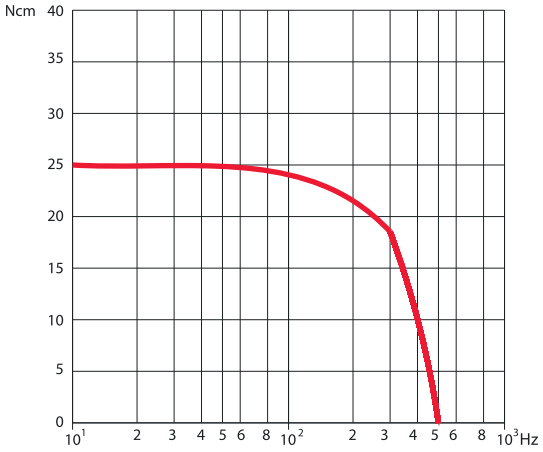


Ordering Data (eg.)

28C C D7 S R

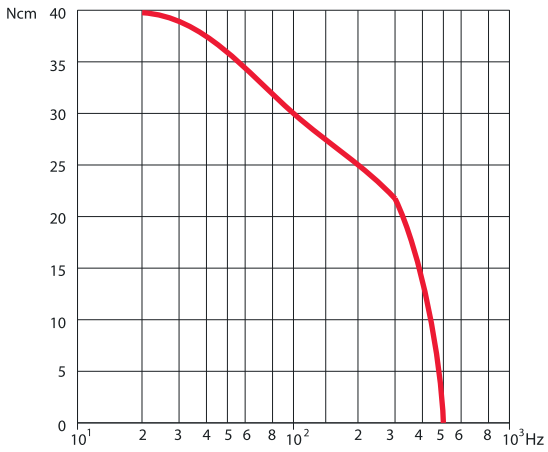
- R — Direction -Reversible
- S — Mounting -with screw clip
- D7 — Voltage -4.5V DC
- C — Approval - CE marked
- 28C — Motor -MTSB8c (bipolar)

Torque Graphs



Torque
Start range

Regular magnet Start range (pull-in) with constant current power stage (chopper Drive)



Strong Magnet Start range (pull-in) with constant current power stage (chopper Drive)

Gear Series **GB2**

Spur Reduction Gearhead - 0.3 Nm

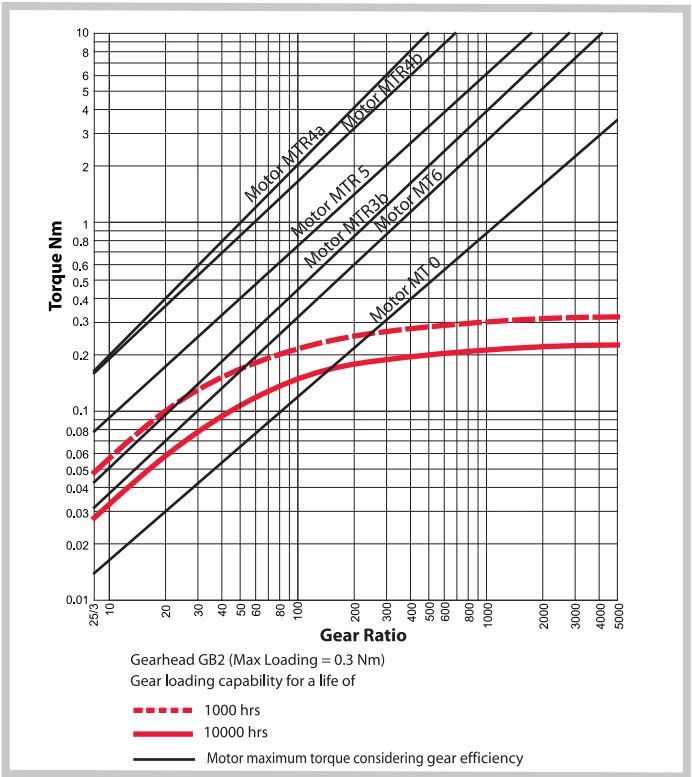
Design

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

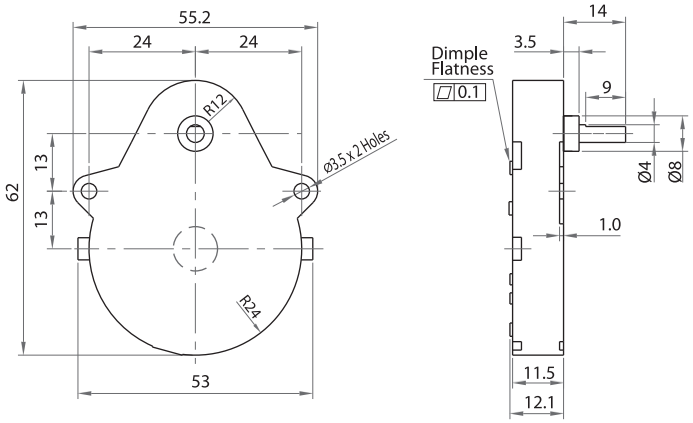
Torque/Transmission Ratio/Life graph



Transmission Ratio

For Transmission Ratios refer to page no. 6

Dimensional Drawing



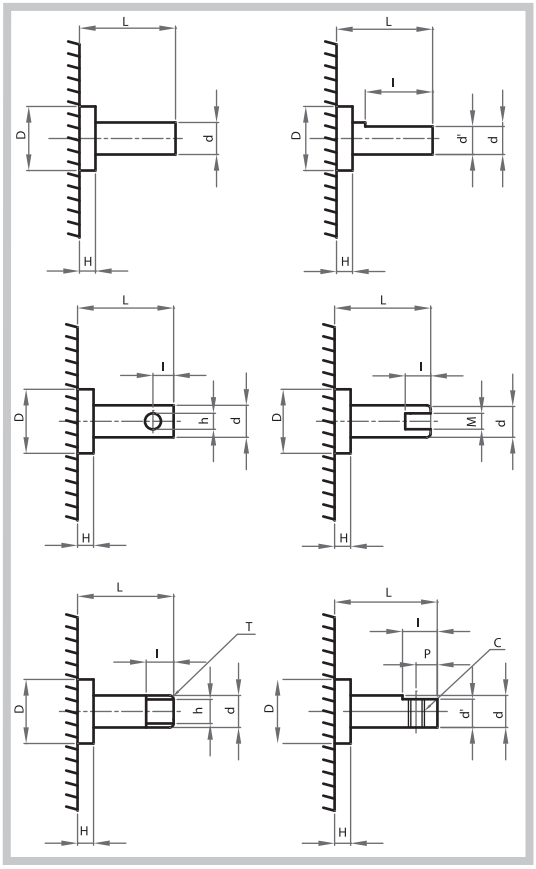
Gear Series **GB2**

Spur Reduction Gearhead - 0.3 Nm

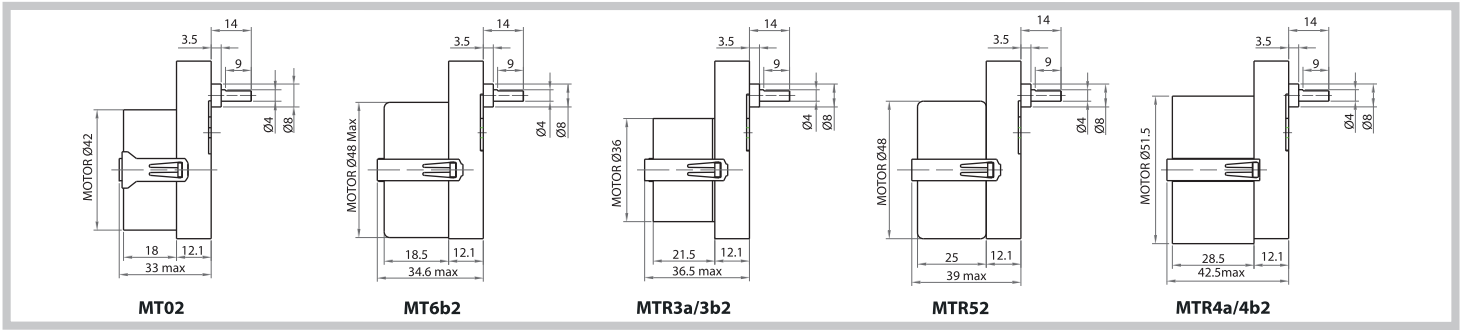
Shaft type catalogue

Shaft type	(+0.00/ -0.10)			Shaft Diam.							
	D	H	L	d	I	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	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

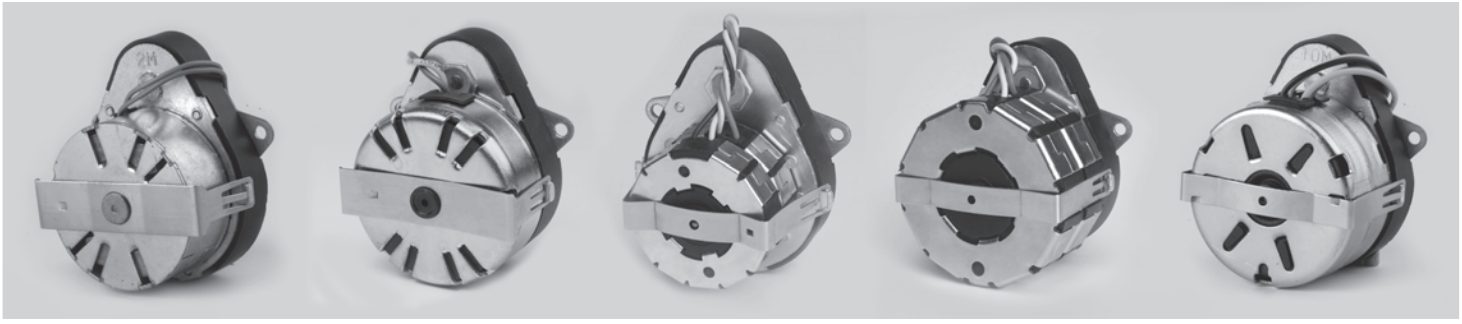


Assembly Drawings



MT02 **MT6b2** **MTR3a/3b2** **MTR52** **MTR4a/4b2**

Photographs



Gear Series **GB5P**

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

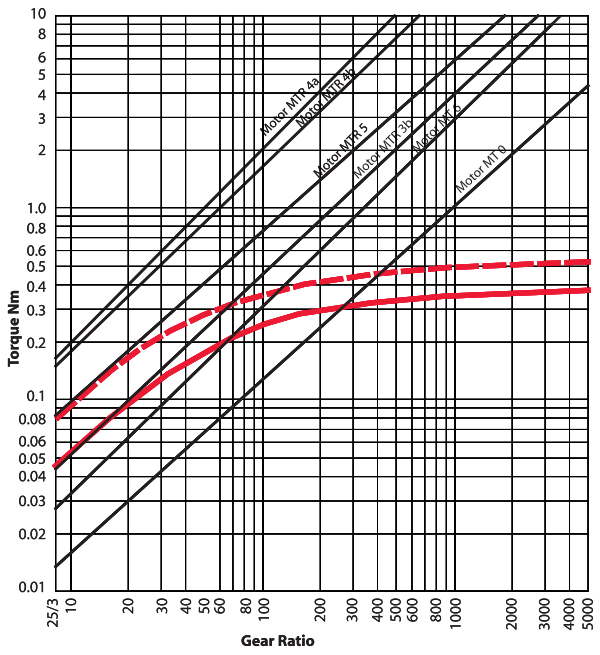
Design

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

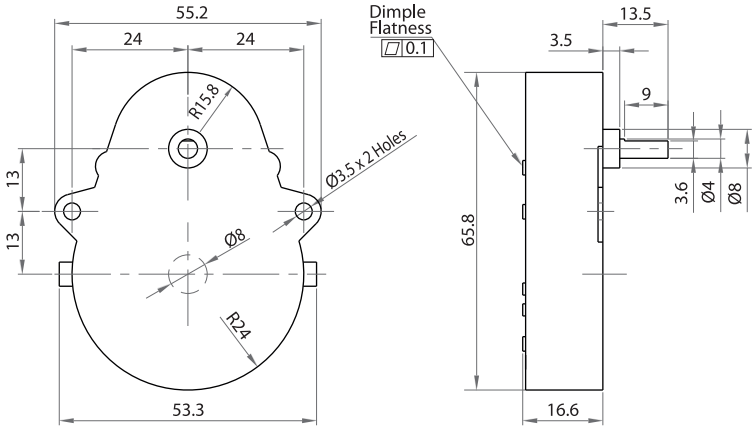
Torque/Transmission Ratio/Life graph



Transmission Ratios

For Transmission Ratios refer to page no. 6

Dimensional Drawing



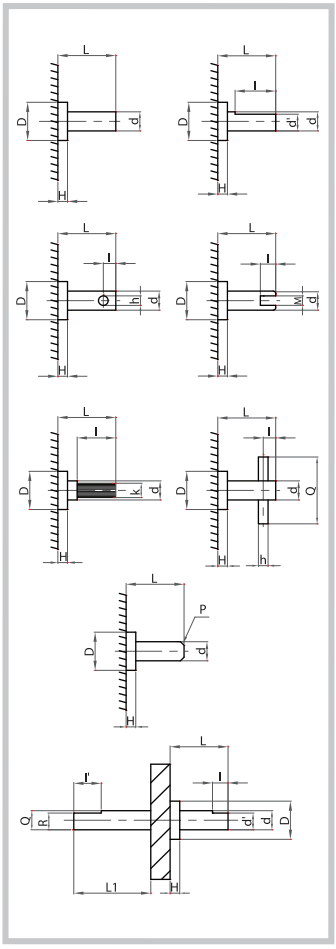
Gear Series **GB5P**

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

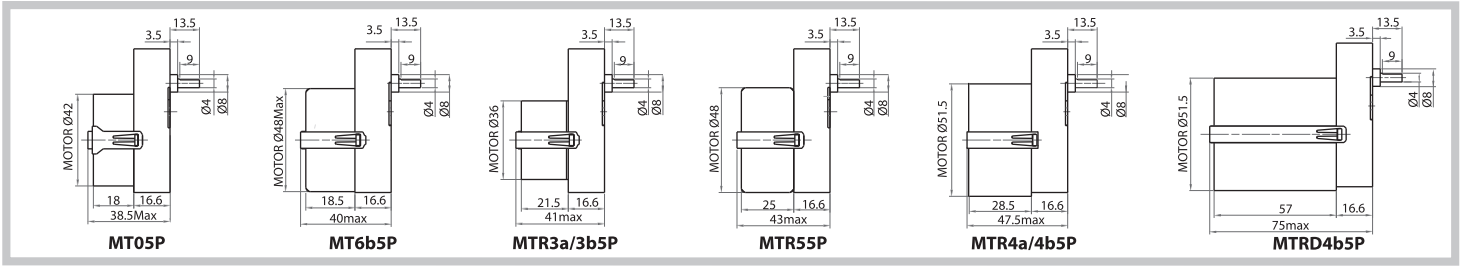
Shaft type Catalogue

Shaft type	(+0.00/-0.10)		Shaft Diam.												
	D	H	d	L	I	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



Photographs

Gear Series **GB5H**

Spur Reduction Gearhead - 0.8 Nm

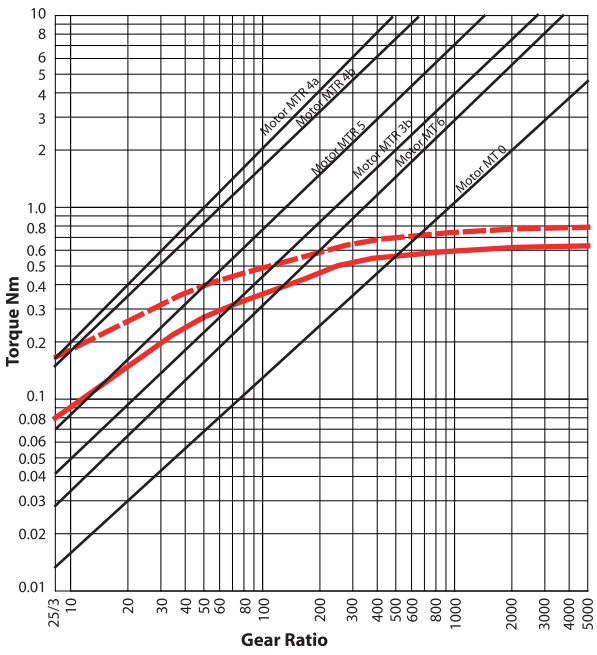
Design

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

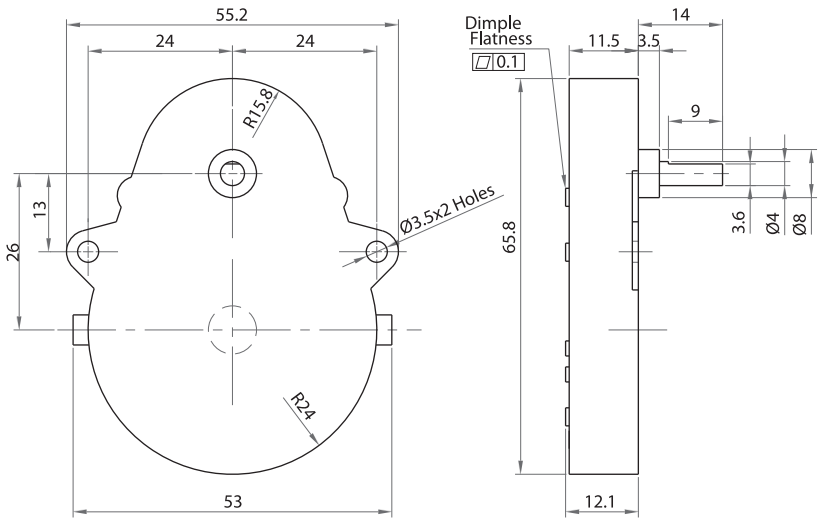
Torque/Transmission Ratio/Life Graph



Transmission Ratios

For Transmission Ratios refer to page no. 6

Dimensional Drawing



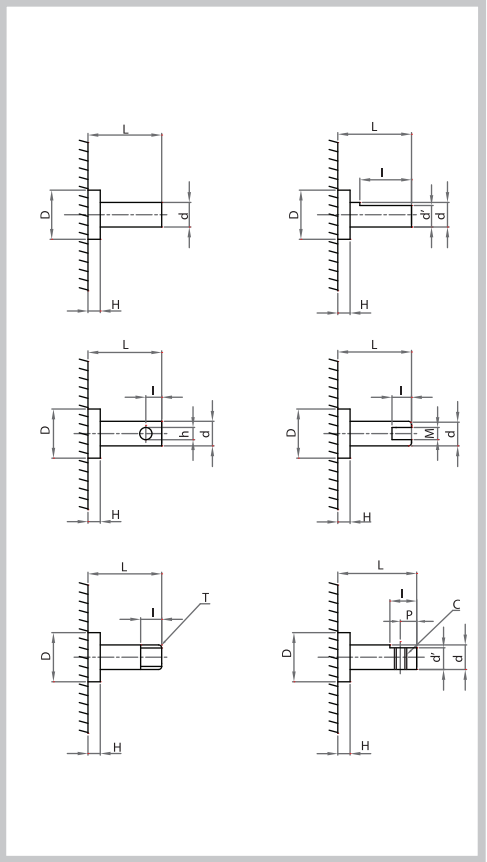
Gear Series **GB5H**

Spur Reduction Gearhead - 0.8 Nm

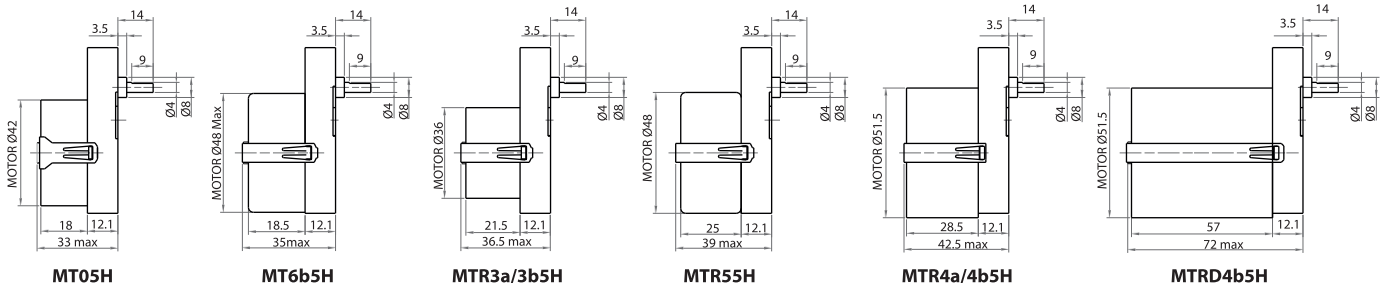
Shaft Type Catalogue

Shaft type	(+0.00/ -0.10)			Shaft Diam.							
		H	L D	d	I	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					

Shaft Drawings

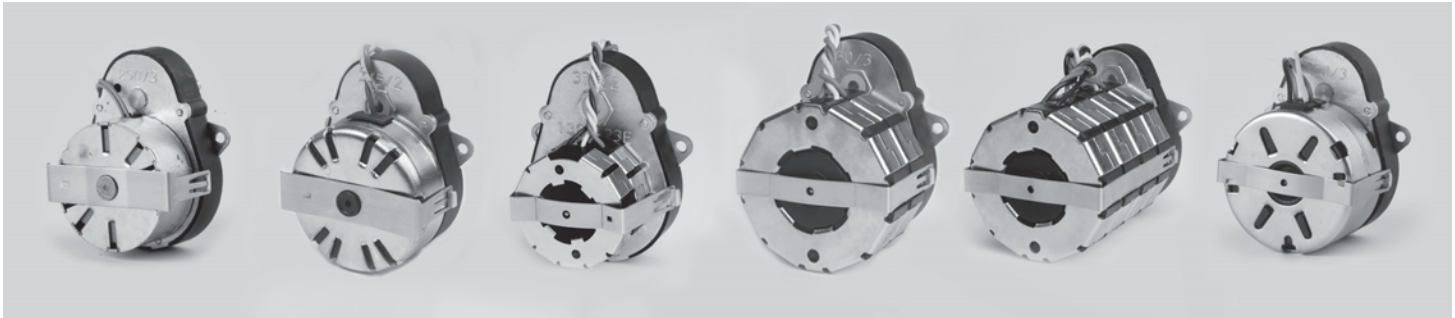


Assembly Drawings



MT05H **MT6b5H** **MTR3a/3b5H** **MTR55H** **MTR4a/4b5H** **MTRD4b5H**

Photographs



Gear Series **GB3/8**

Spur Reduction Gearhead - 4 Nm

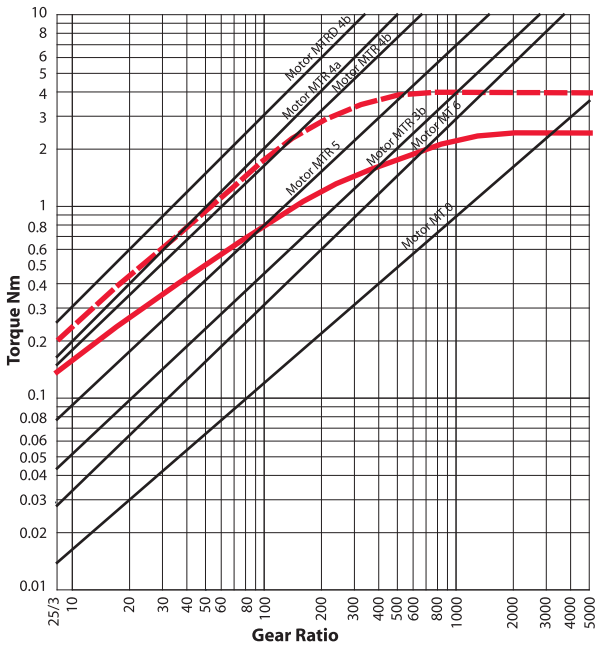
Design

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

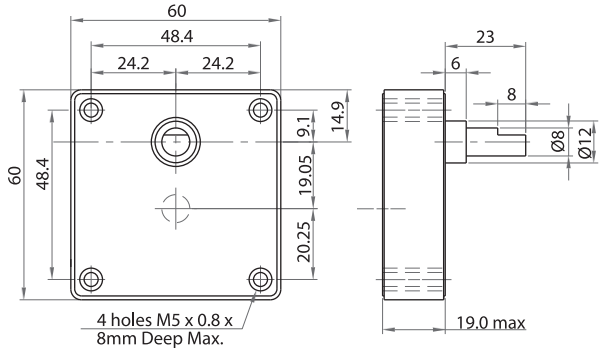
Torque/Transmission Ratio/Life Graph



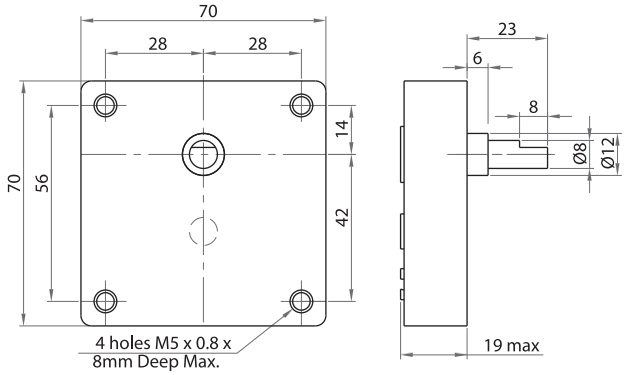
Transmission Ratios

For Transmission Ratios refer to page no. 6

Dimensional Drawing GB3



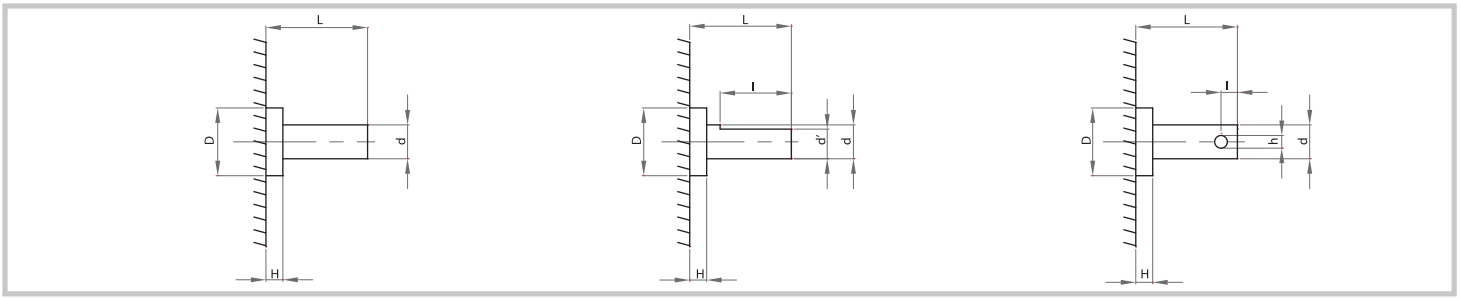
Dimensional Drawing GB8



Gear Series **GB3/8**

Spur Reduction Gearhead - 4 Nm

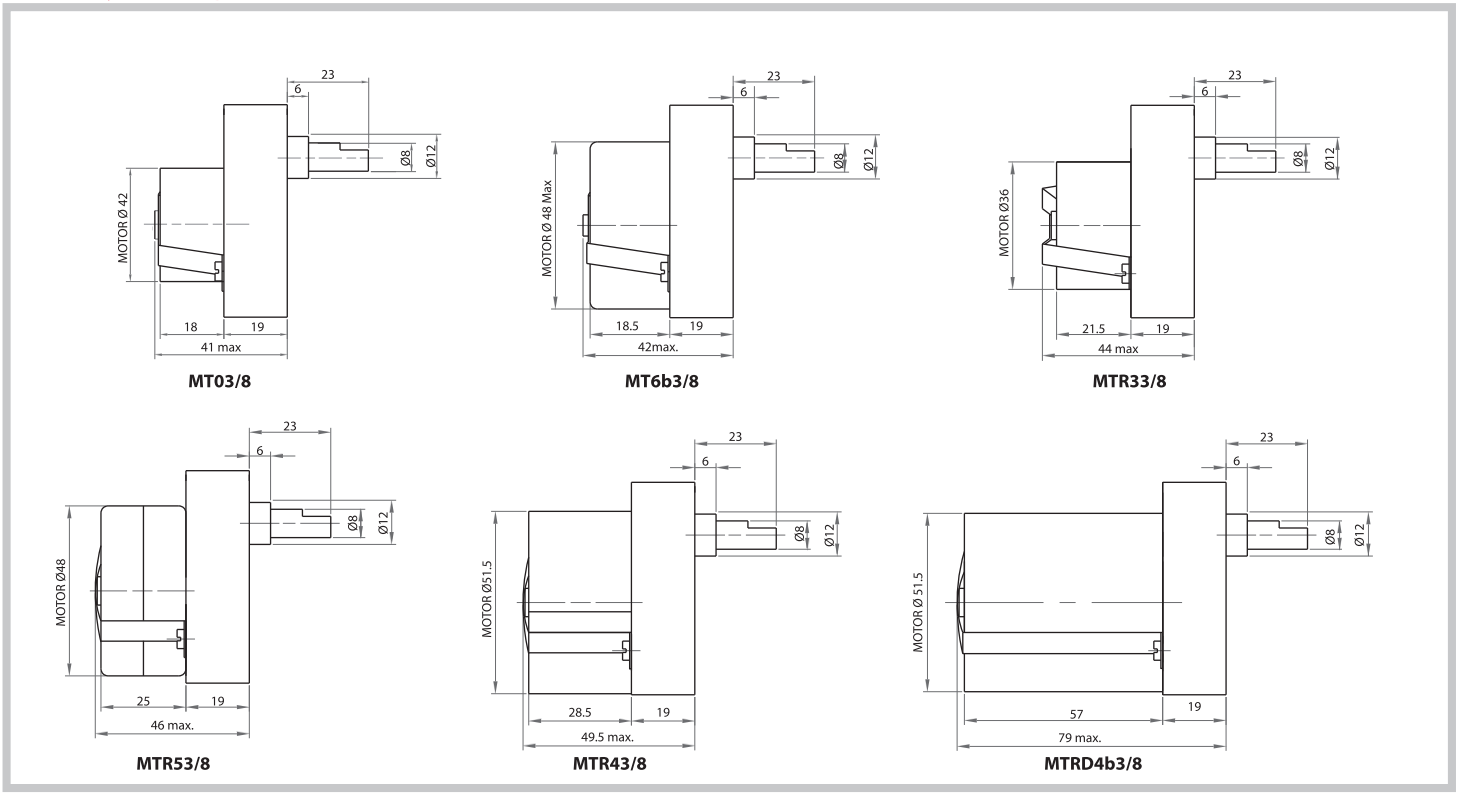
Shaft Drawings



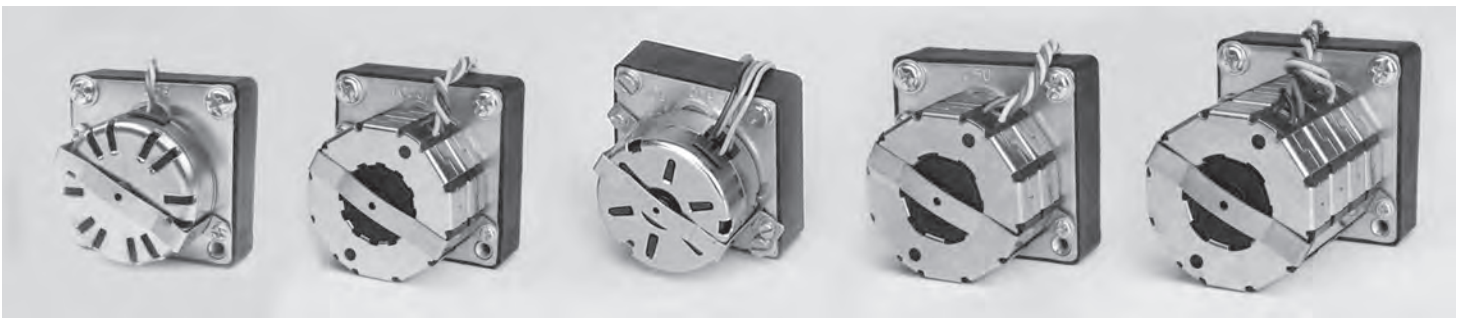
Shaft Type Catalogue

Shaft type	D (+0.00/ -0.10)	H	d (dia)	L	l	d'	h
OS	12	6	8	23	8	6	
OA	12	6	8	33	18	6	
OC	12	6	8	23	9		3

Assembly Drawings



Photographs



Gear Series **GB7**

Spur Reduction Gearhead - 5 Nm

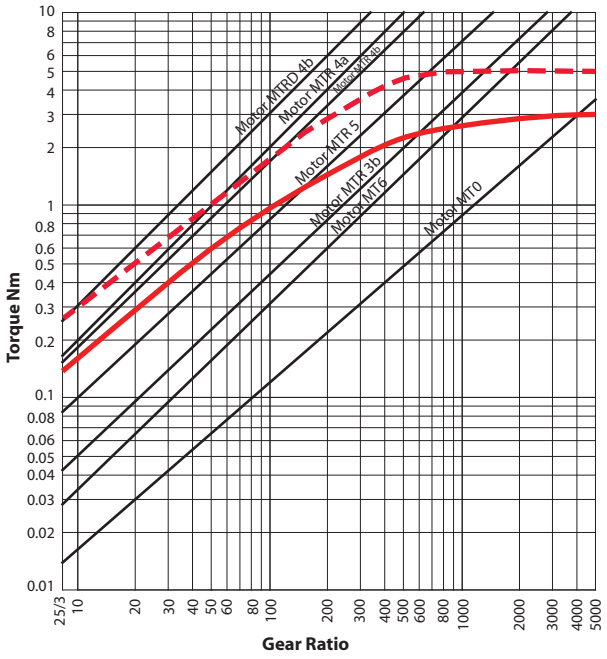
Design

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



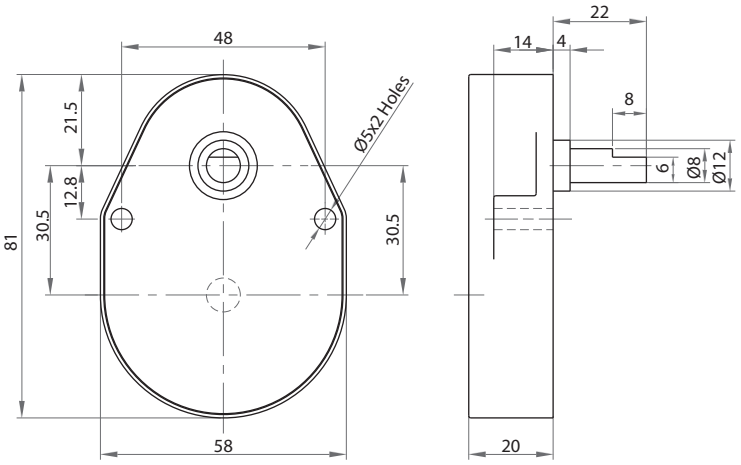
Gear Box GB7 (Max Loading = 5 Nm)
Gear loading capability for a life of

- 1000 hrs
- 10000 hrs
- Motor maximum torque considering gear efficiency

Transmission Ratios

For Transmission Ratios refer to page no. 6

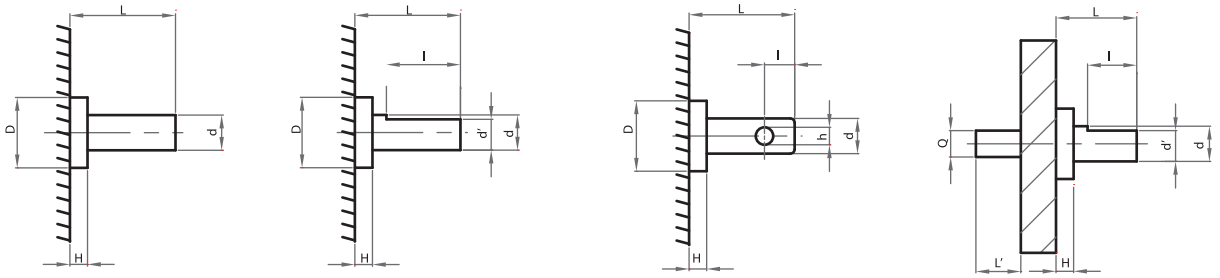
Dimensional Drawing



Gear Series **GB7**

Spur Reduction Gearhead - 5 Nm

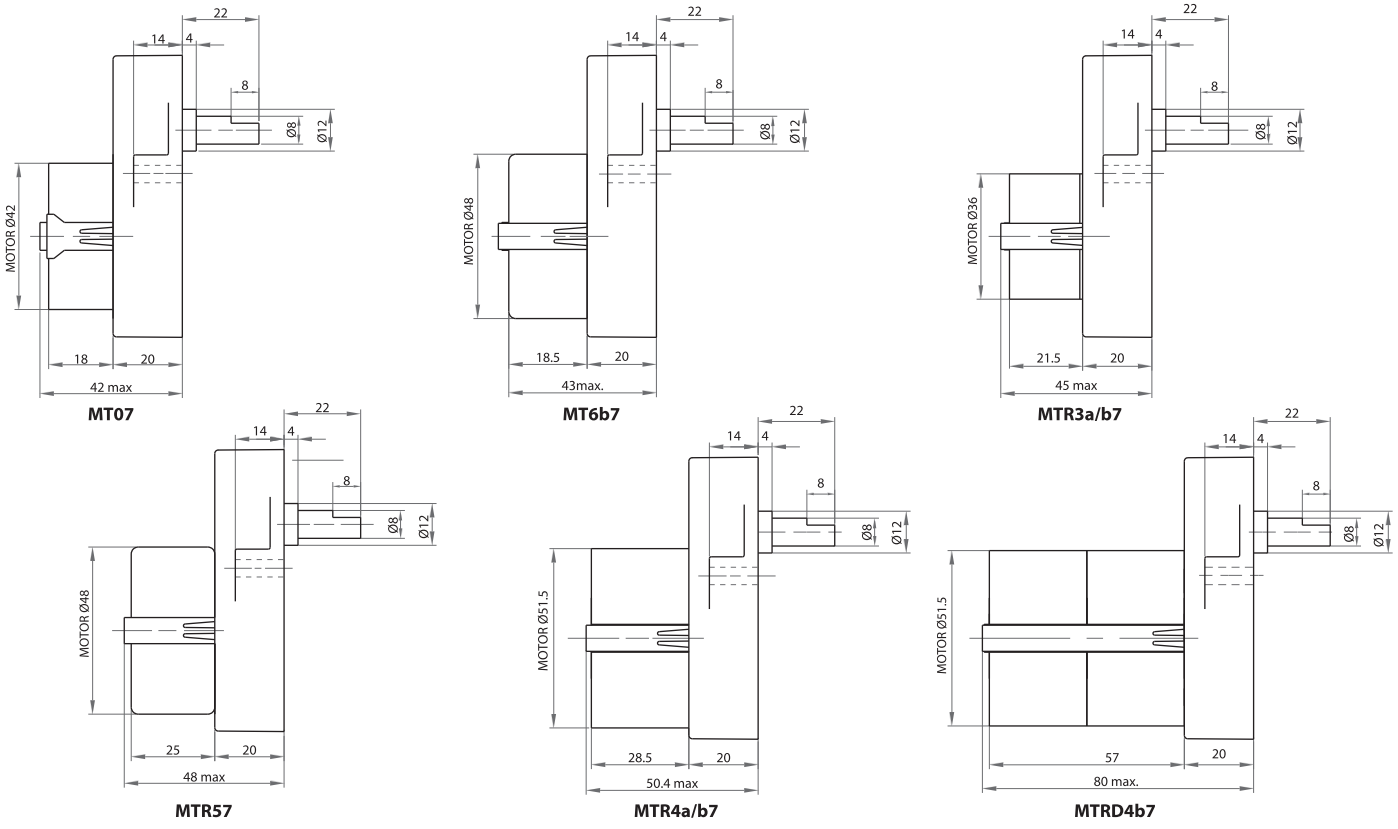
Shaft Drawings



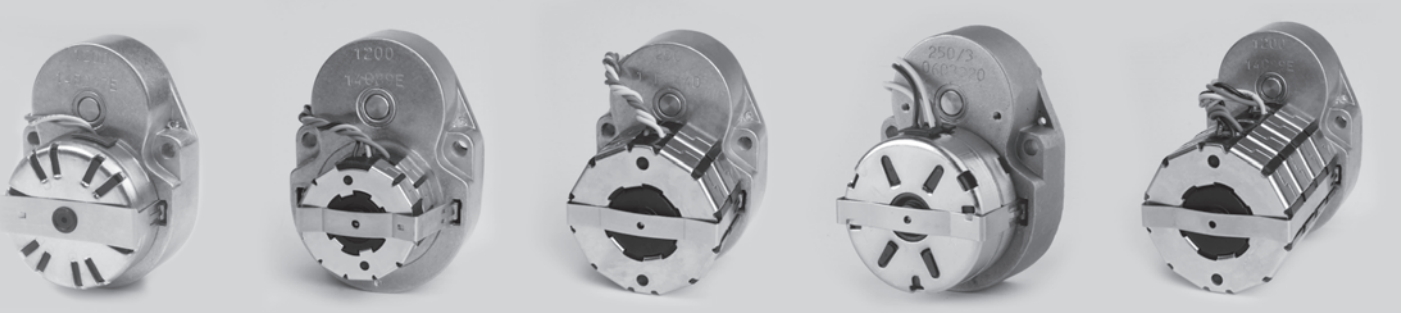
Shaft Type Catalogue

Shaft type	D (+0.00/ -0.10)	H	d (dia)	L	l	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



Photographs



Gear Series **GB4**

Spur Reduction Gearhead -5 Nm

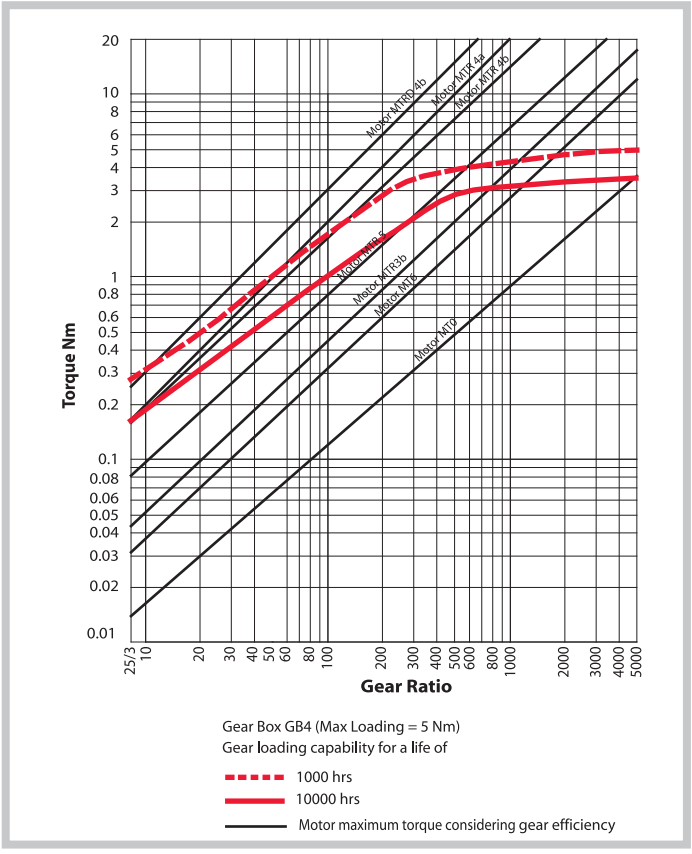
Design

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. Econamical 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

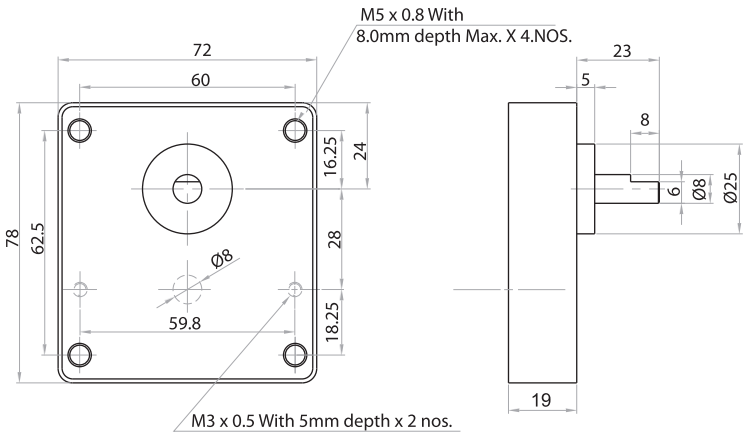
Torque/Transmission Ratio/Life Graph



Transmission Ratios

For Transmission Ratios refer to page no. 6

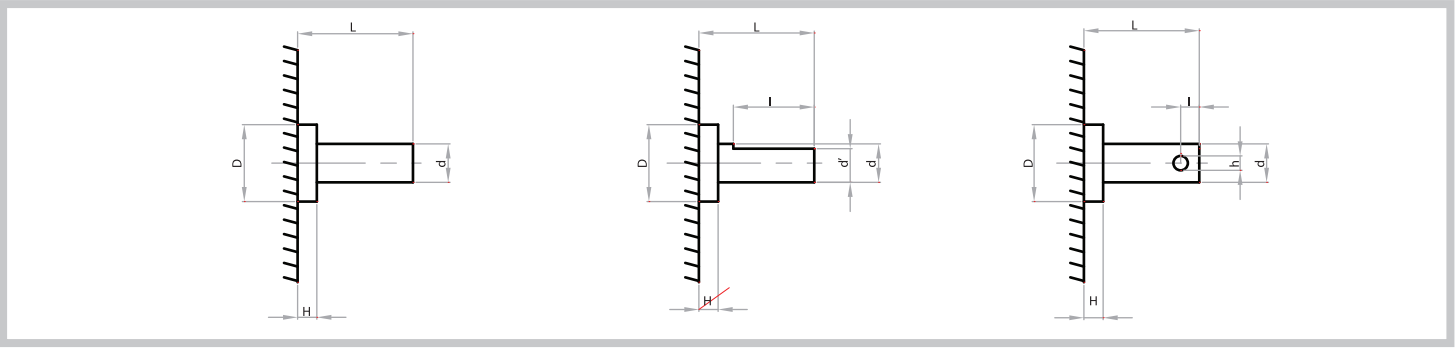
Dimensional Drawing



Gear Series **GB4**

Spur Reduction Gear head - 5 Nm

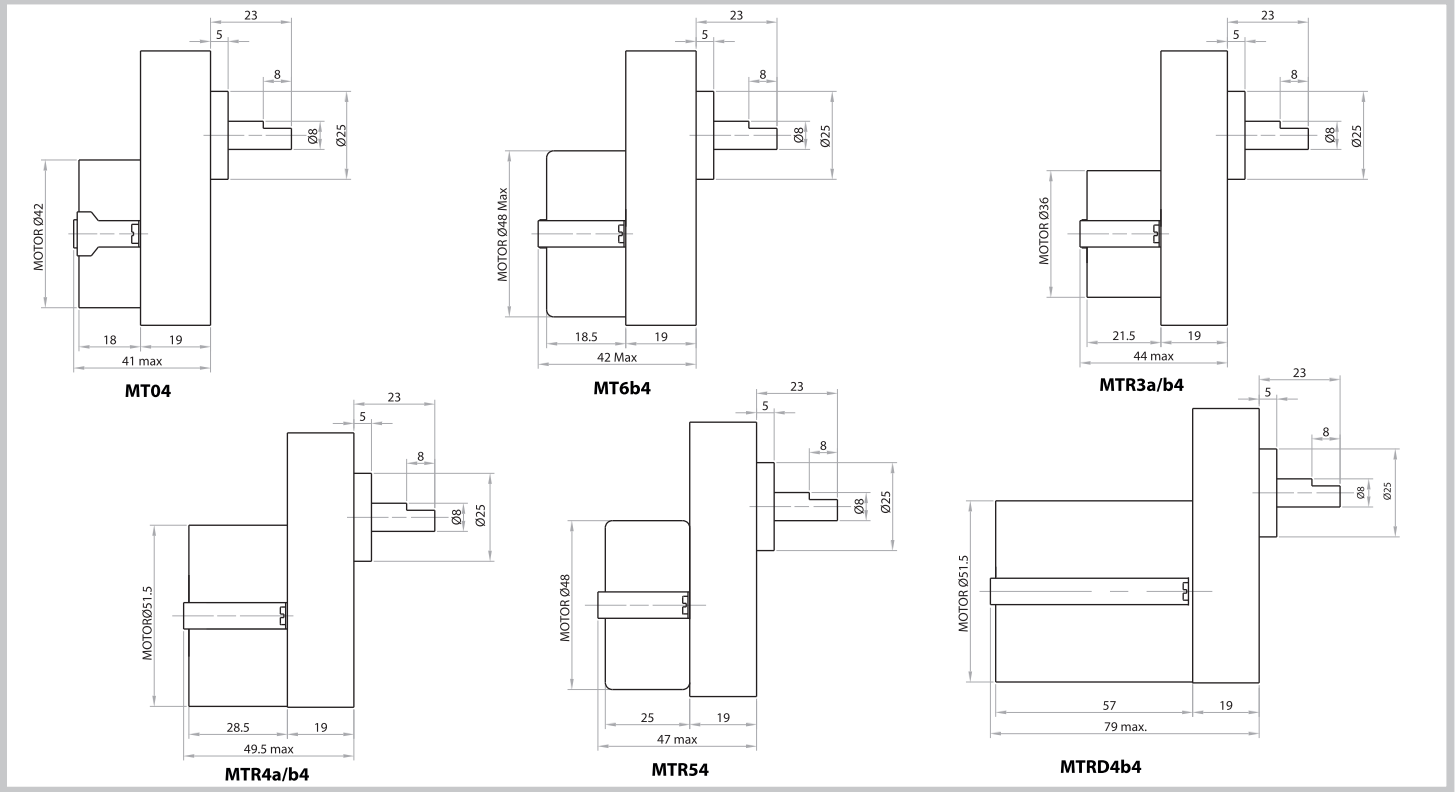
Shaft Drawings



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



Photographs

Gear Series **GBU/V**

Spur Reduction Gearhead - 6 Nm

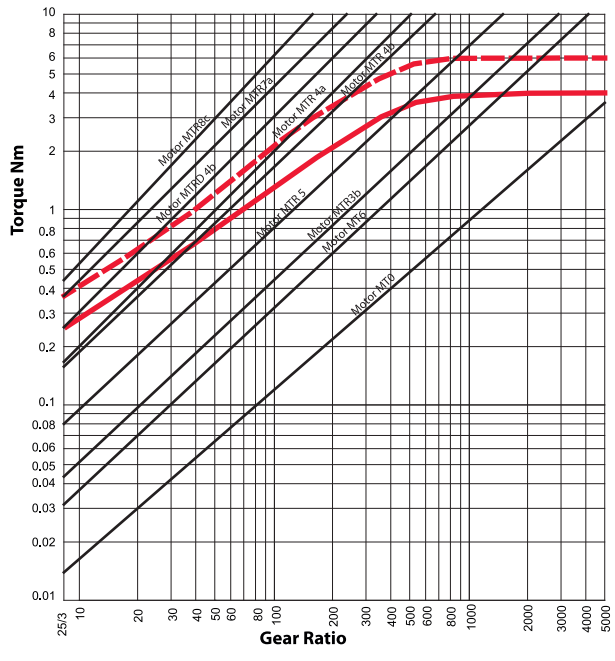
Design

Gearhead GBU/V contains heavily loaded steel gear wheels. The spur gears are fixed on steel spindles which are hardened and polished to a mirror finish & rotate in robust sintered bushings. The thick output shaft rotates in robust sintered bronze bushings. All the gears are housed in between metal plates & closed by plastic dust cover. All bearings are permanently lubricated and therefore require no maintenance. GBU/V can also be combined with small to medium sizes of DC motors (up to Ø52mm).

Standard Data

Gear Type		Spur Reduction
Gear Torque	Nm	6
Combination with Mechtex motors		MT0,MT6,MTR/S5,MTR/S-4a/b,MTR/SD-4,MTR/SD4-RE & DC motors (up to Ø52mm)
		MTR/S 7a & MTR/S 8c
Mounting		any position
Weight	g	350
Axial thrust	N	30
Lateral force	N	250
Radial torque	Nm	4
Output bearing		Sintered bronze sleeve bushings, Ball Bearing (on special request)
Output shafts	Ø	dia. 8 x 25 mm (with a flat), others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

Torque/Transmission Ratio/Life Graph



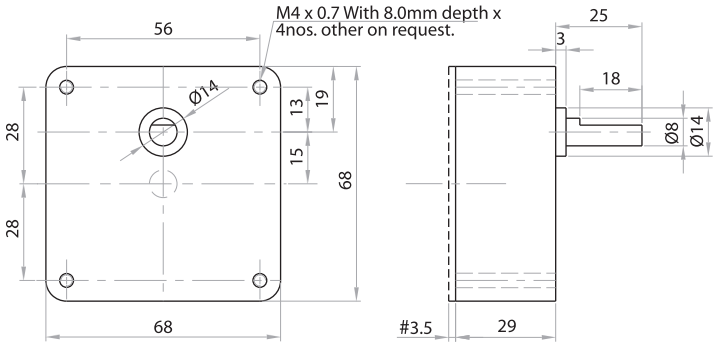
Gear Box GB V/U (Max Loading = 6 Nm)
Gear loading capability for a life of

- 1000 hrs
- 10000 hrs
- Motor maximum torque considering gear efficiency

Transmission Ratios

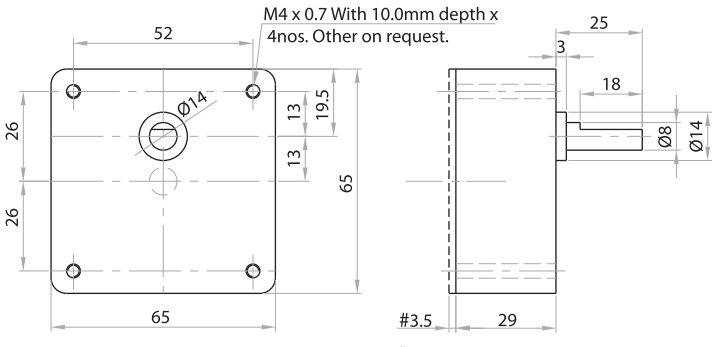
For Transmission Ratios refer to page no. 6

Dimensional Drawing GBU



For ratio transmitted in 4 stages

Dimensional Drawing GBV

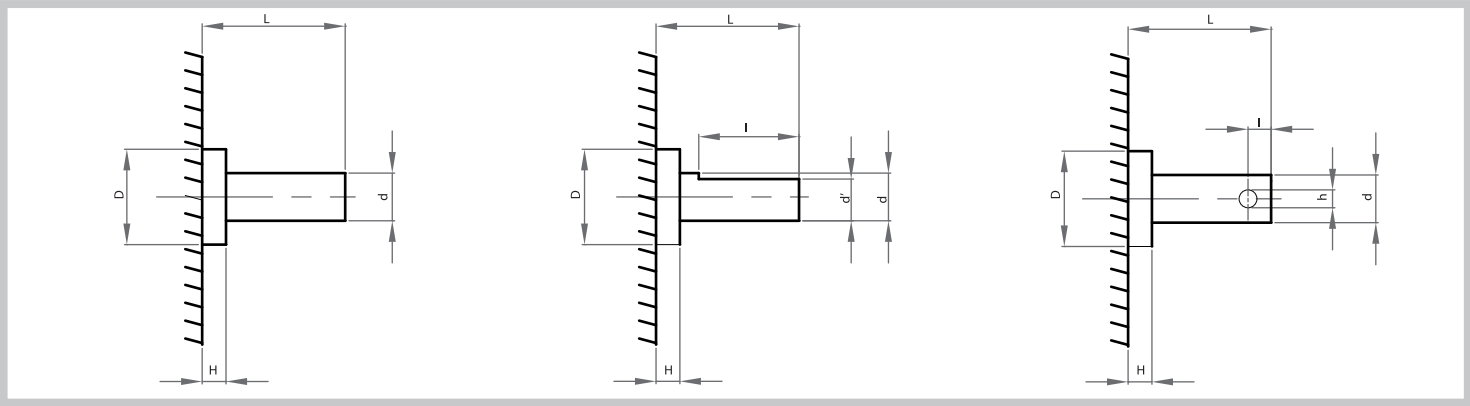


For ratio transmitted in 4 stages

Gear Series **GBU/V**

Spur Reduction Gearhead - 6 Nm

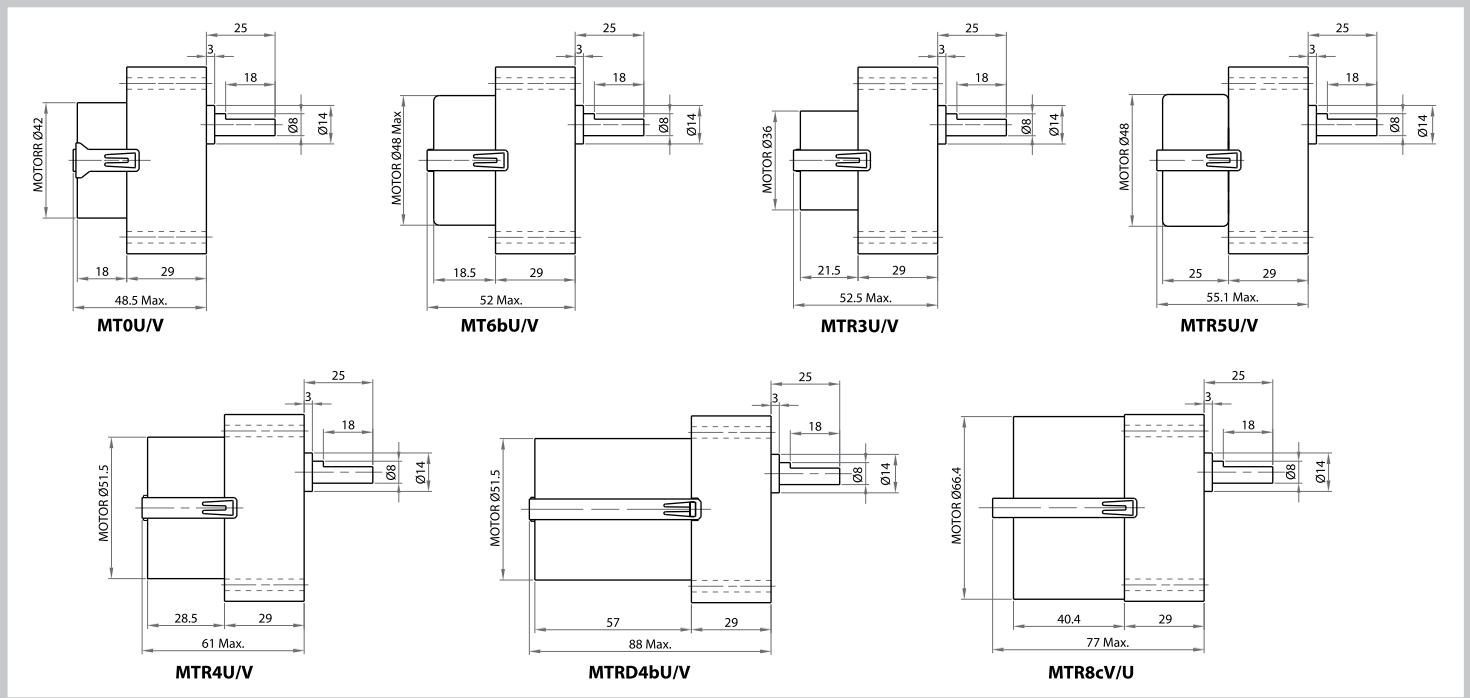
Shaft Drawings



Shaft Type Catalogue

Shaft type	D (+0.00/ -0.10)	H	d (dia)	L	l	d'	h
OS	14	3	8	25	18	6	
OA	14	3	8	25	13		3
OB	14	3	8	25			

Assembly Drawings



Photographs

Gear Series **GBW**

Spur Reduction Gearhead - 15 Nm

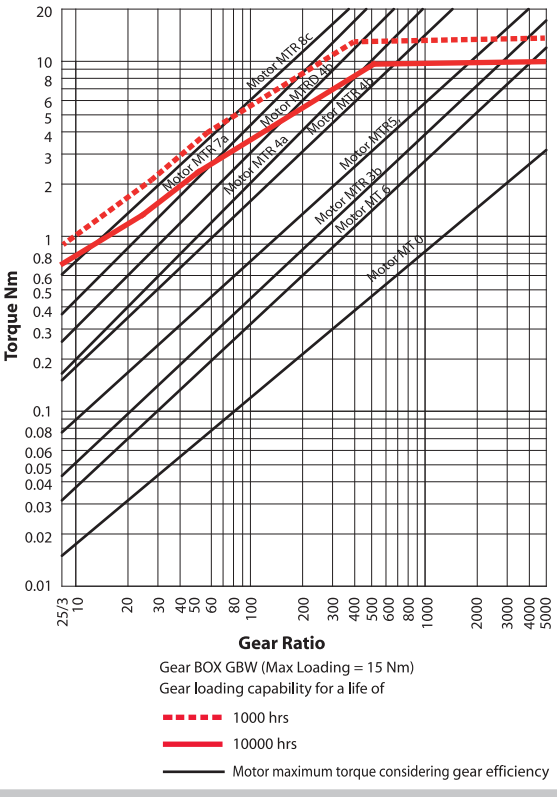
Design

Gearhead GBW contains heavily loaded steel gear wheels. The spur gears are fixed on steel spindles which are hardened and polished to a mirror finish & rotate in sintered bushings. The thick output shaft rotates in robust sintered bushings. All the gears are housed in between metal plates & closed by plastic dust cover. All bearings are permanently lubricated and therefore require no maintenance. GBW can also be combined with small to medium sizes of DC motors (up to Ø52mm). Output shaft can also be emerging from the rear side or both sides.

Standard Data

Gear Type		Spur
Gear Torque	Nm	15
Combination with Mechtex motors		MT0,MT6,MTR/S5,MTR/S-4a/b,MTR/SD-4a/b, MTR/S-7a,MTR/S-8c and DC motors / (upto 52 mm)
Mounting		any position
Weight	g	550
Axial thrust	N	400
Lateral force	N	600
Radial torque	Nm	6
Output bearing		Sintered Bronze sleeve bushings, (Ball bearing on request)
Output shafts	Ø	dia. 12 x 25.5 mm (with a flat), others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

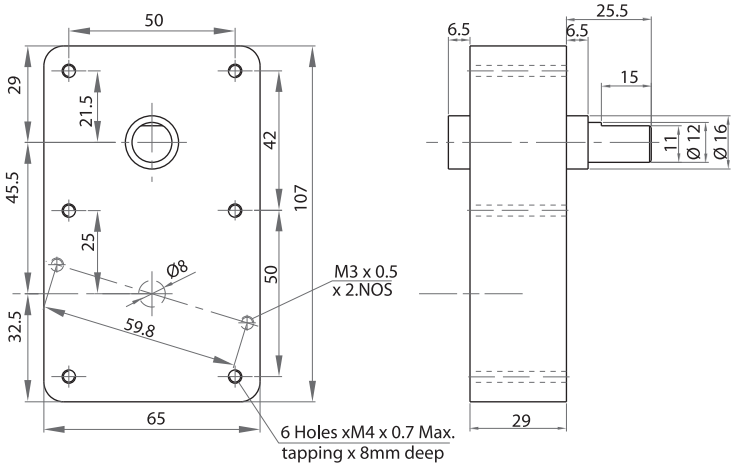
Torque/Transmission Ratio/Life Graph



Transmission Ratios

For Transmission Ratios refer to page no. 6

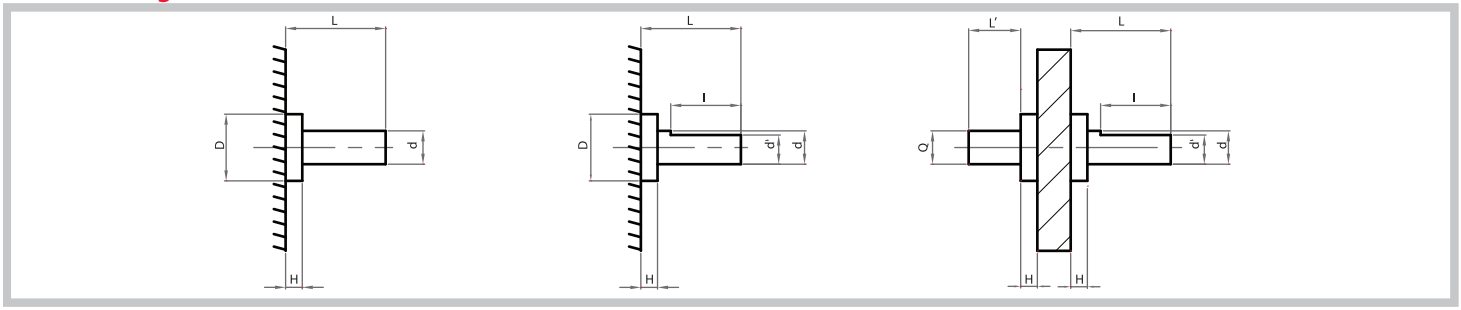
Dimensional Drawing



Gear Series **GBW**

Spur Reduction Gearhead - 15 Nm

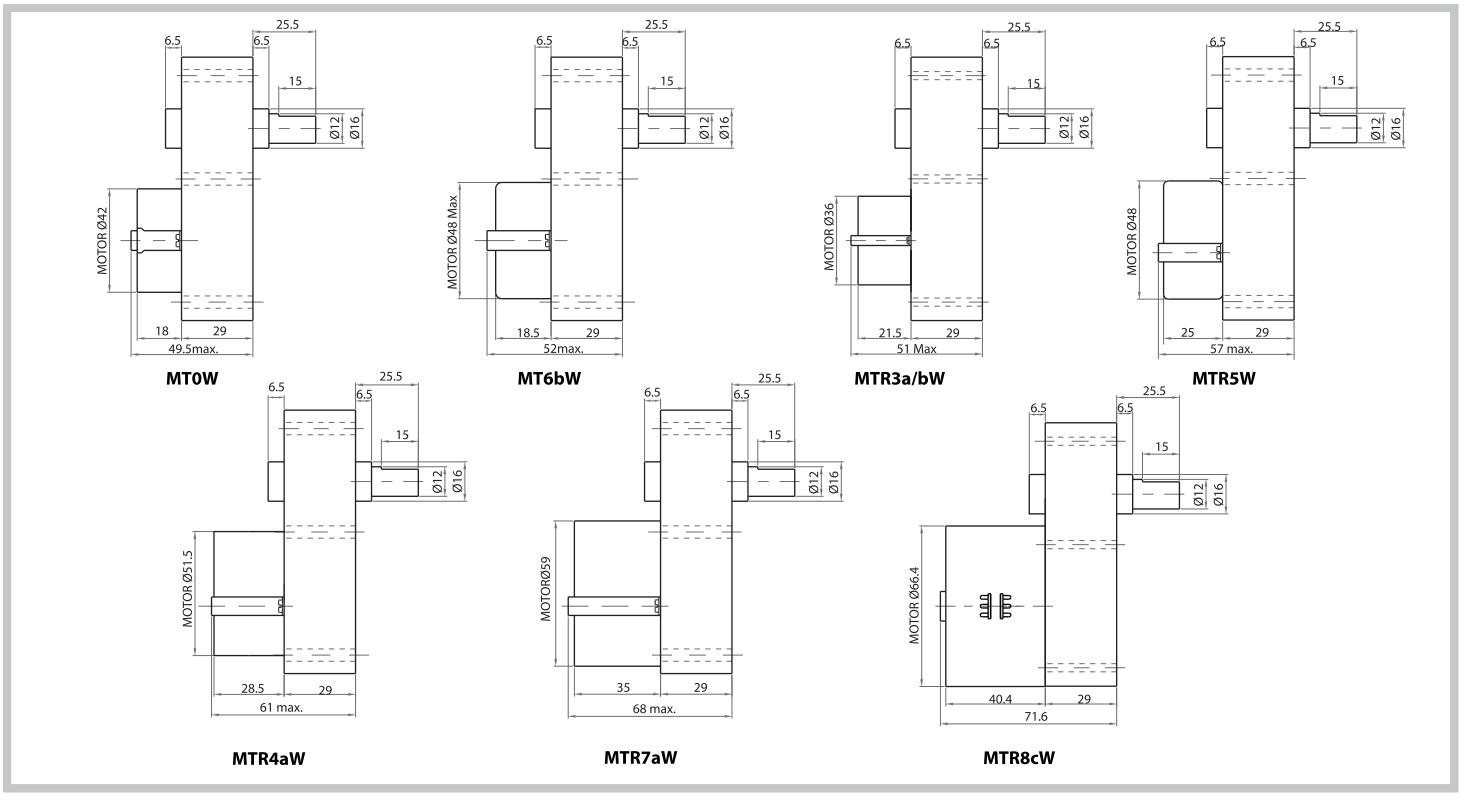
Shaft Drawings



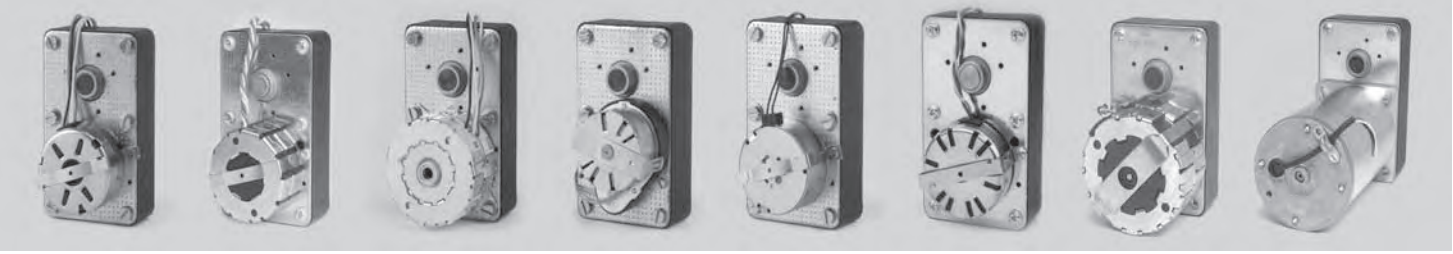
Shaft Type Catalogue

Shaft type	D (+0.00/ -0.10)	H	d (dia)	L	l	d'	L'	Q
OS	16	6.5	12	25.5	15	11		
OA	16	6.5	12	35.5	25	11		
OB	16	6.5	12	25.5	15	11	17	12
OC	16	6.5	12	25.5				
OD	16	6.5	12	35.5				

Assembly Drawings



Photographs



Gear Series **GBX**

Spur Reduction Gearhead - 30 Nm

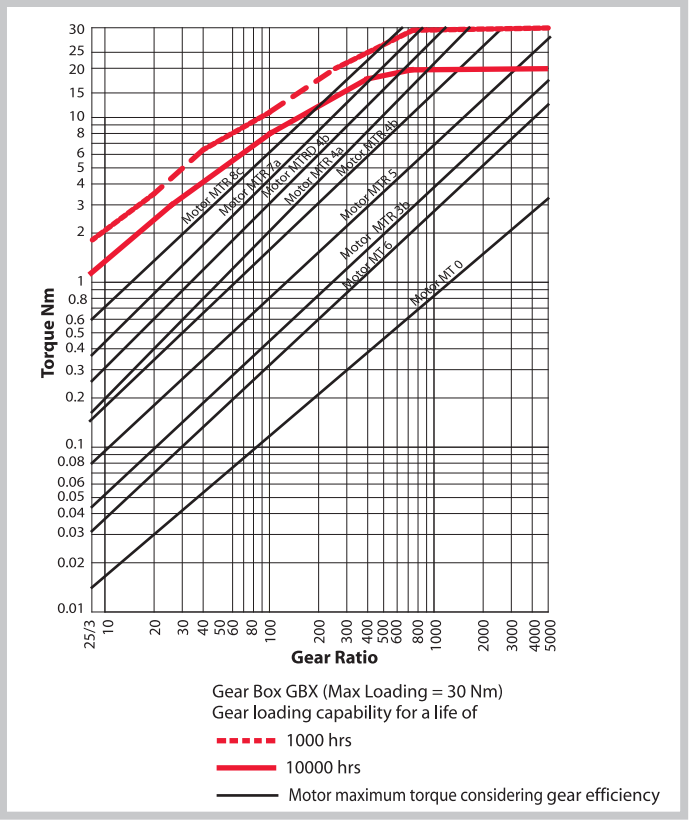
Design

Gearhead GBX contains heavily loaded steel gear wheels. The spur gears are fixed on steel spindles which are hardened and polished to a mirror finish & rotate in sintered bushings. The thick output shaft rotates in robust bronze bushings. All the gears are housed in between metal plates & closed by plastic dust cover. All bearings are permanently lubricated and therefore require no maintenance. GBX can also be combined with small to medium sizes of DC motors (up to Ø52mm). Output shaft can also be emerging from the rear side or both sides.

Standard Data

Gear Type		Spur
Gear Torque	Nm	30
Combination with Mechtex motors		MT0, MT6, MTR/S5, MTR/S-4a/b, MTR/SD-4b, MTR/SD4b-RE & DC motors (Up to dia 52 mm)
		MTR/S 7a & MTR/S 8c
Mounting		any position
Weight	g	850
Axial thrust	N	600
Lateral force	N	900
Radial torque	Nm	12
Output bearing		Sintered Bronze sleeve bushings, (Ball bearing on request)
Output shafts	Ø	dia.15 x 26.5 mm (with a flat), others on request
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

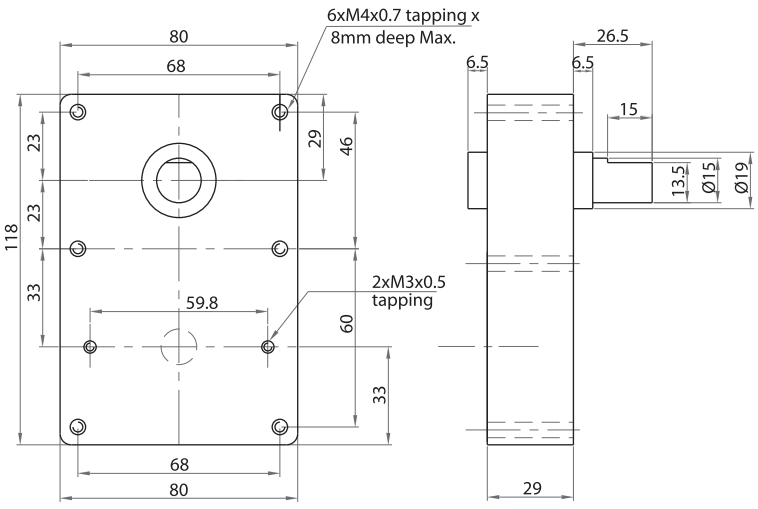
Torque/Transmission Ratio/Life Graph



Transmission Ratios

For Transmission Ratios refer to page no. 6

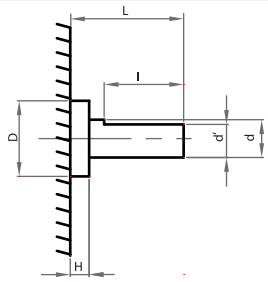
Dimensional Drawing



Gear Series **GBX**

Spur Reduction Gearhead - 30 Nm

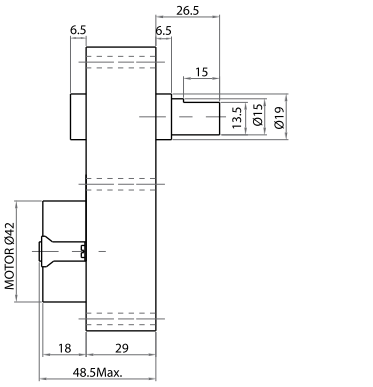
Shaft Drawings



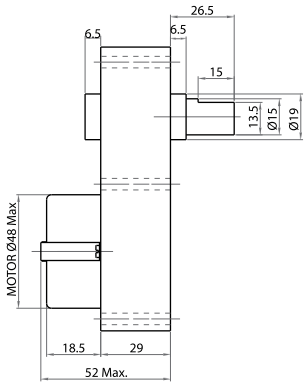
Shaft Type Catalogue

Shaft type	D (+0.00/ -0.10)	H	d (dia)	L	l	d'
OS	19	6.5	15	26.5	15	13.5
OA	19	6.5	15	46.5	35	13.5

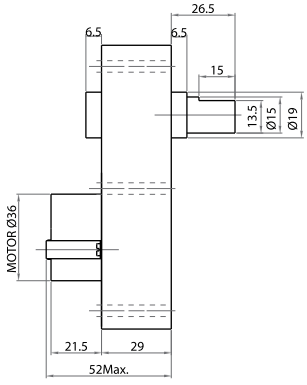
Assembly Drawings



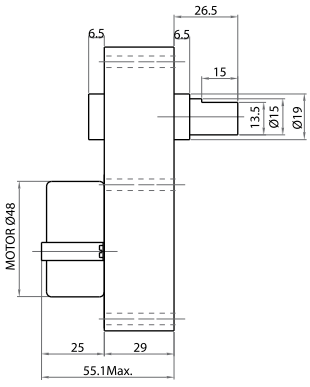
MT0X



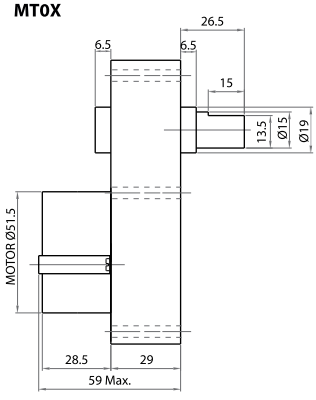
MT6bX



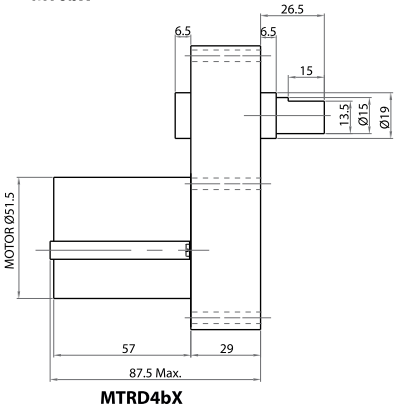
MTR3a/bX



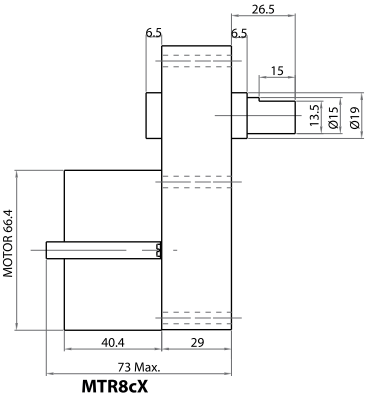
MTR5X



MTR4a/bX

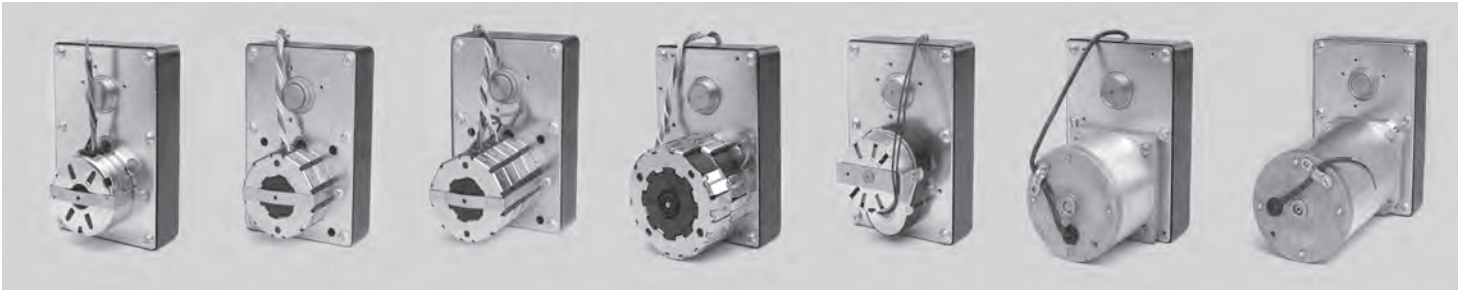


MTRD4bX



MTR8cX

Photographs



MECHTEX

Gear Series **GB38OCP**

Spur Reduction Gearhead - 0.5 Nm

Design

Gearhead GB38OCP 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 (Ø6-7mm) mounted in robust bushings (Ø12) are available. Similarly the gears at the output end can be metal (GB38OCPH) with thick shafts (Ø6-7mm) & robust bushings. Sintered gears variant also possible (GB38OCSi).

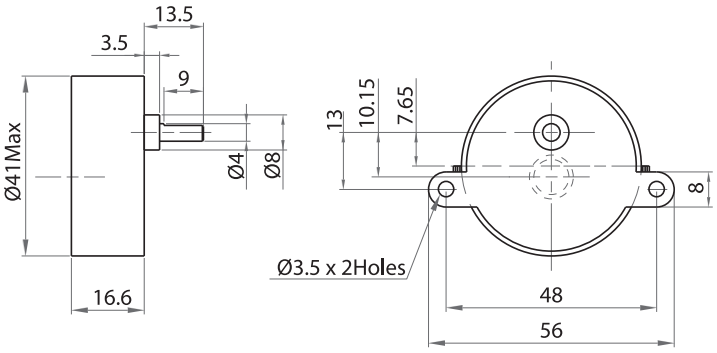
Standard Data

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	Ø	Shafts same as GB5P gear series
Ambient temperature operation	°C	-15...+ 55
Enclosure	IP	30

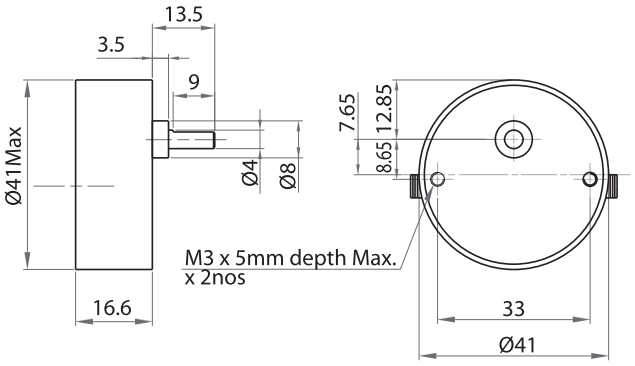
Transmission Ratios

For Transmission Ratios refer to page no. 6

Dimensional Drawing

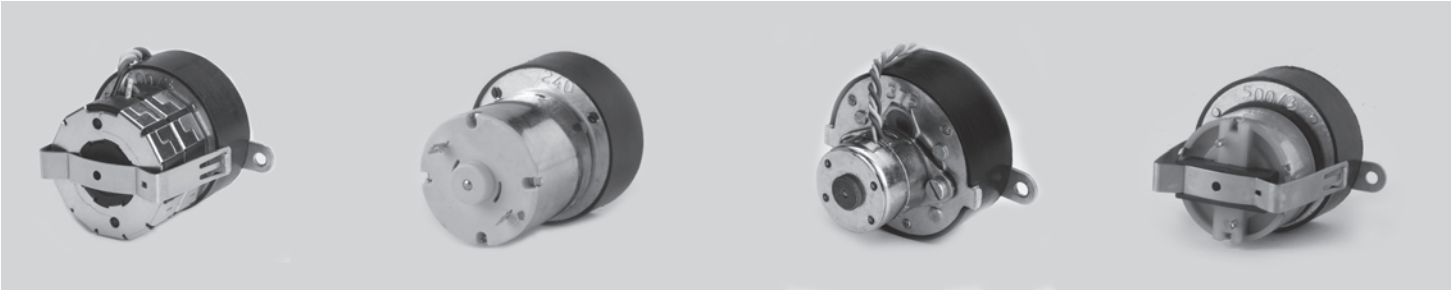


With Mounting Plate



With Round Plate Threaded Nut

Photographs



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.

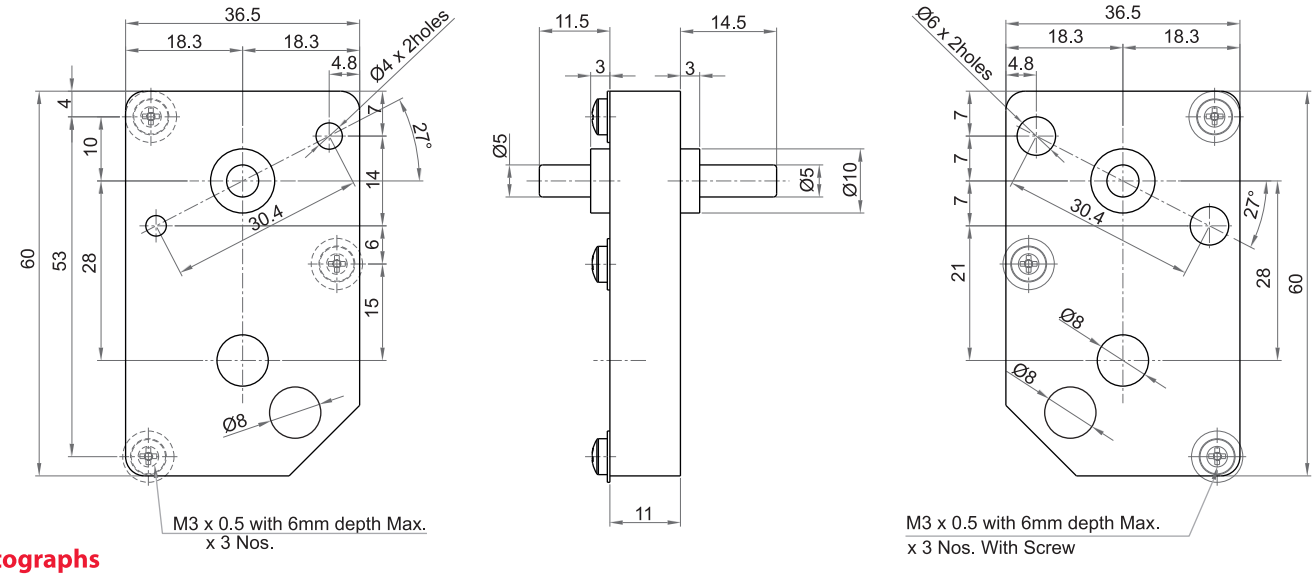
Technical Data

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



Photographs

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.

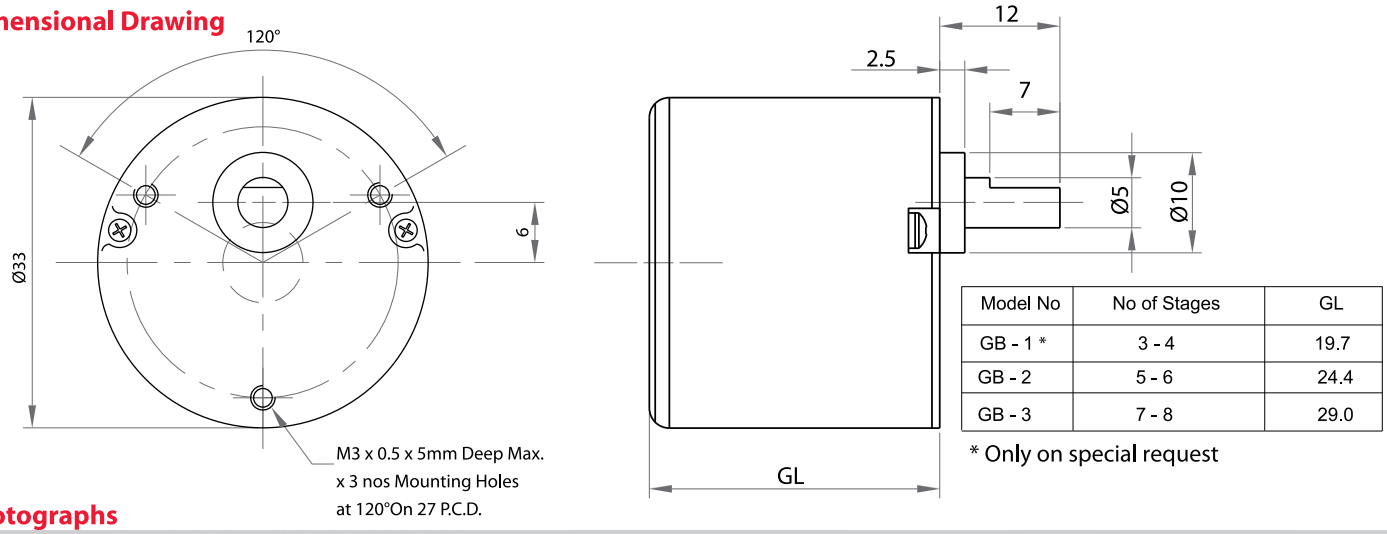
Technical Data

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 ; preferrably 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

Photographs

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.

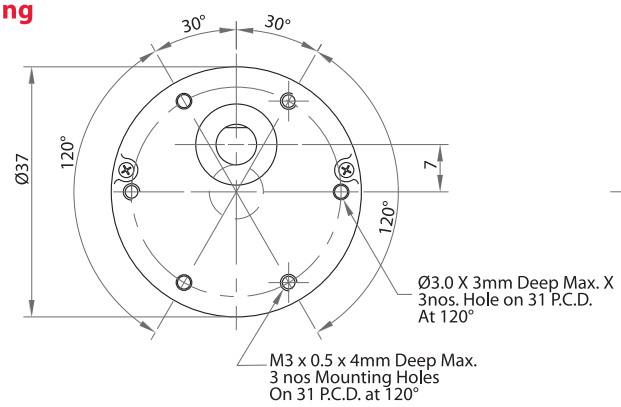
Technical Data

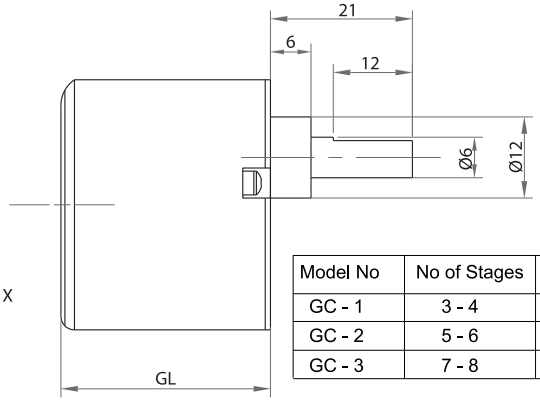
Gear Type		Spur Reduction(1st pair helical)
Gear Torque	Nm	0.5
Combination with Mechtex motors		DC24 / DC28 / D32 / DC30* / DC38* others on request
Mounting		any position ; preferrably with shaft horizontal
Weight	g	Variable with reduction stages (180 approx)
Axial thrust	N	15
Lateral force	N	50
Radial 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

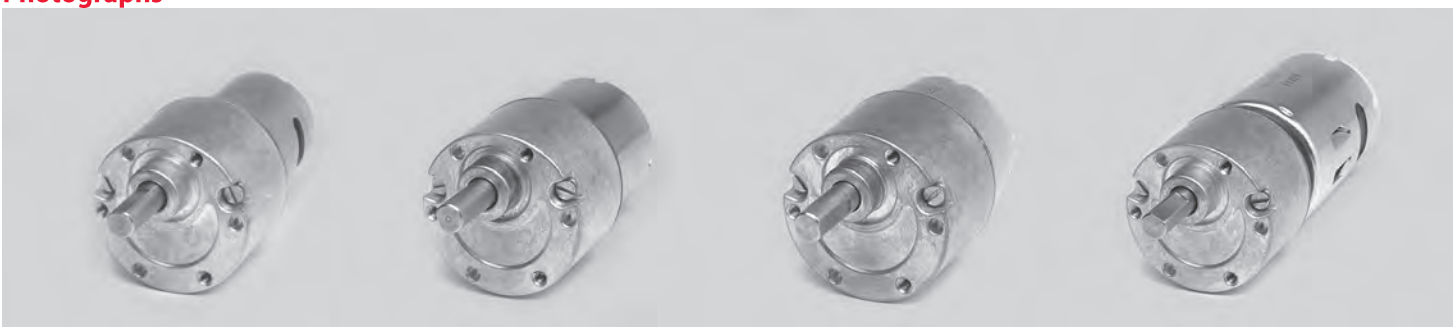
Dimensional Drawing





Model No	No of Stages	GL
GC - 1	3 - 4	20.6
GC - 2	5 - 6	25.3
GC - 3	7 - 8	29.55

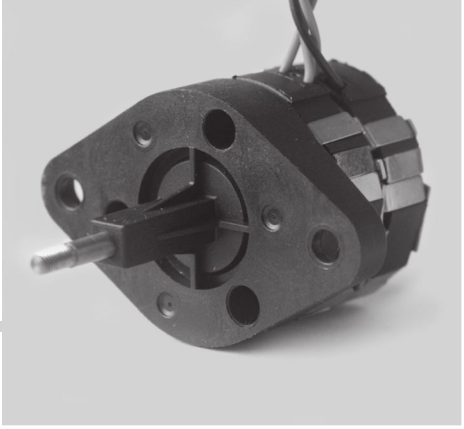
Photographs



MECHTEX

Motor Series **MTR3L**

Synchronous Linear Actuator



Application

Instrumentation, Machinery, Valve Actuators, Medical Equipment, Dampers, HVAC, Factory Automation, Valves etc.

Design

MTR3L is a linear reversing synchronous motor 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 series with one of the stator windings. Axial movement is determined by the resulting circular rotating field. Electrical reversal of the axial movement is effected by means of a single-pole changeover switch. The 12 pole rotor causes to & fro movement when motor is energised.

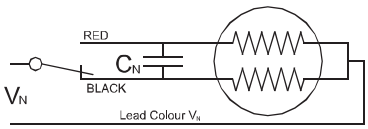
Standard Data

Motor type		Reversible synchronous linear actuator
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		> 100k cycles at rated torque
Mounting		any position
HVT		As per standard IEC 60034-1
Weight	g	90
Rotor stalling		Motor can be stopped when voltage is applied, without being overheated
Rotor shaft		Copper alloy
Bearings		Ball bearing
External dimensions		dia. 36 x 40.5 mm

Technical Data

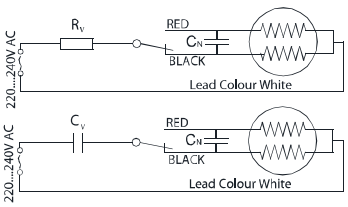
Standard Motor Voltages (V_N)	V	12	24	110	230 *
Operation capacitor (50 Hz) C_N	µF/VAC	15/20	3.9/50	0.18/250	With add on units
Operation capacitor (60 Hz) C_N	µF/VAC	15/20	3.9/50	0.18/250	
Lead colour (V_N)		Grey	Blue	White	White
Tolerance of Voltage	%	-10... +15% of rated voltage			
Duty Cycle	%	100* (* other duty cycles on request)			
Rated Frequency	**Hz**	**50**		**60**	
Linear speed	mm/sec	6.67		8	
Linear travel	mm	13		13	(others on request)
Power Consumption at V_N	W	1.6		1.6	
Max force	N	20* (* for special winding only)			

Connection Diagram



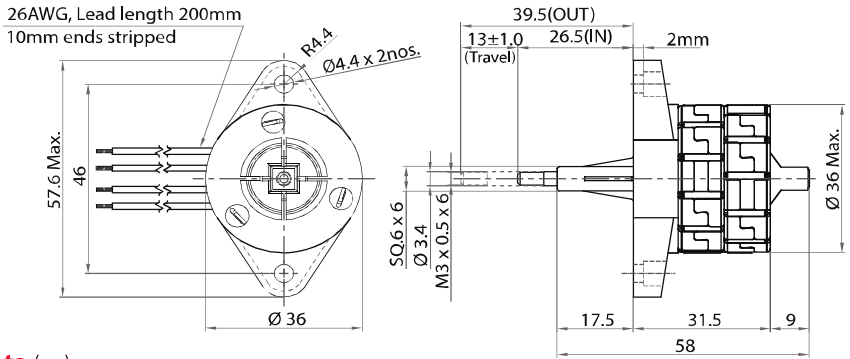
Add on units for 220 & 240 V

220.....240 V (V_N motor 110V)

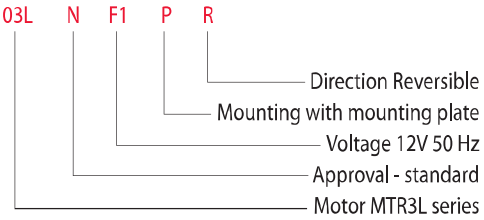


Unit	220V	240V
R_V (1.5W) 50/60Hz	8.2 K Ω	8.2 K Ω
C_V (200 VAC) 50 Hz	0.22 µF	0.22 µF
C_V (200 VAC) 60 Hz	0.18 µF	0.18 µF

Dimensional Drawing



Ordering Data (eg.)



Motor Series **MTS3L**

Stepper Linear Actuator

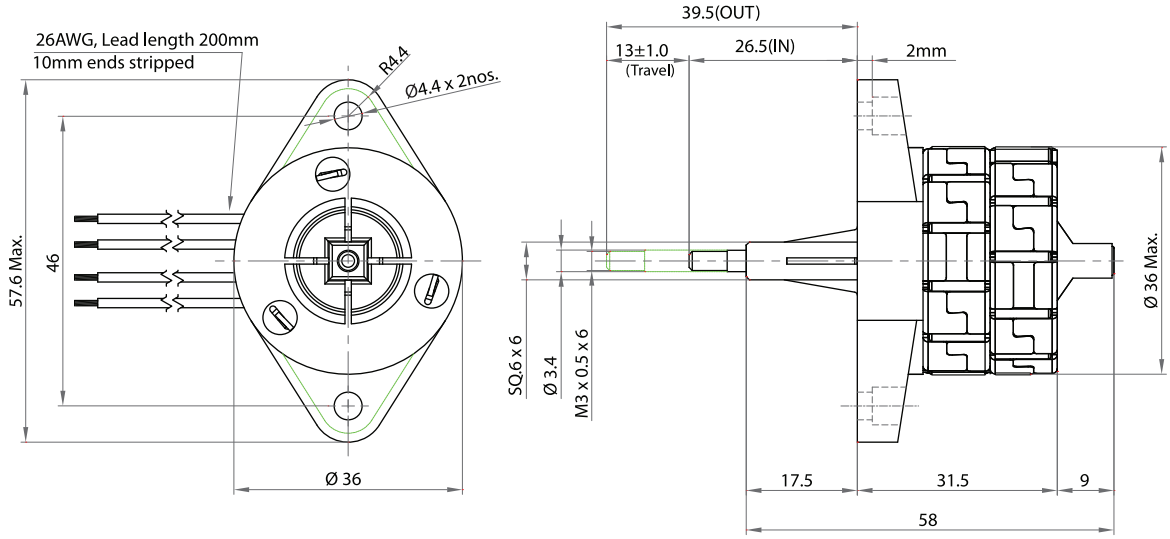
Standard Data

Motor type		Stepper Linear Actuator
Thermal Class	°C	105
Electrical Enclosure	IP	40
Connectoins		Flexible Leads 26 AWG, 200mm length; ends stripped 10 mm
Life Expentancy		> 100 k cycles at rated torque
Mounting		any position
Weight	g	90
Rotor Shaft		Copper alloy
Bearing		Ball bearing

Technical data

Steps per Revolution			24		
Winding Type			bipolar		
Standard Voltage	V	3	6	12	24
Resistace per Winding	Ω	11.5	18.5	100	460
Winding Type			unipolar		
Standard Voltage	V	3	6	12	24
Resistace per Winding	Ω	12	28.5	120	500
Max Force	N		20*		(*on special winding only)
Travel / Step	mm		0.033		
Linear Travel	mm		13		(others on request)
Linear Speed @200 Hz	mm/ sec		6.67		

Dimensional Drawing



Ordering Data (eg.)

13L N D3 P R

- R – Direction - Reversible
- P – Mounting -with mounting plate
- D3 – Voltage - 6V DC
- N – Approval - standard
- 13L – Motor -MTSU3L unipolar

DC28 Combinations

DC Geared Motors

Design

DC28 Series motors are DC motors (Outsourced) that are used in combination with many Mechtex gearheads. Depending on the application, output speed, load applied etc the type of gearhead can be selected. Various types of gears i.e poly acetal, sintered iron, brass, SRBF (helical) & steel gears can be used based on the load considerations. Poly acetal or sintered gears usually are used for noise dampening & complete poly acetal gears are used when the output torque required is less. All bearings are permanently lubricated and therefore require no maintenance.

Standard Data

Motor Type		PM Brushed dc motor
Combination with Mechtex Gear Series		GB 2/5P/5H, GB 38OCP, GB B/C/L, GB 3/4/7/8, GBV/U/W/X
Standard motor voltages	V	24, 12, 6 & 3 (others on request)
Weight	g	65
Enclosure	IP	30
Mounting		By snap clip or by screws
Life expectancy		Approx 500 hours @ max efficiency
Direction		Reversible

Technical Data

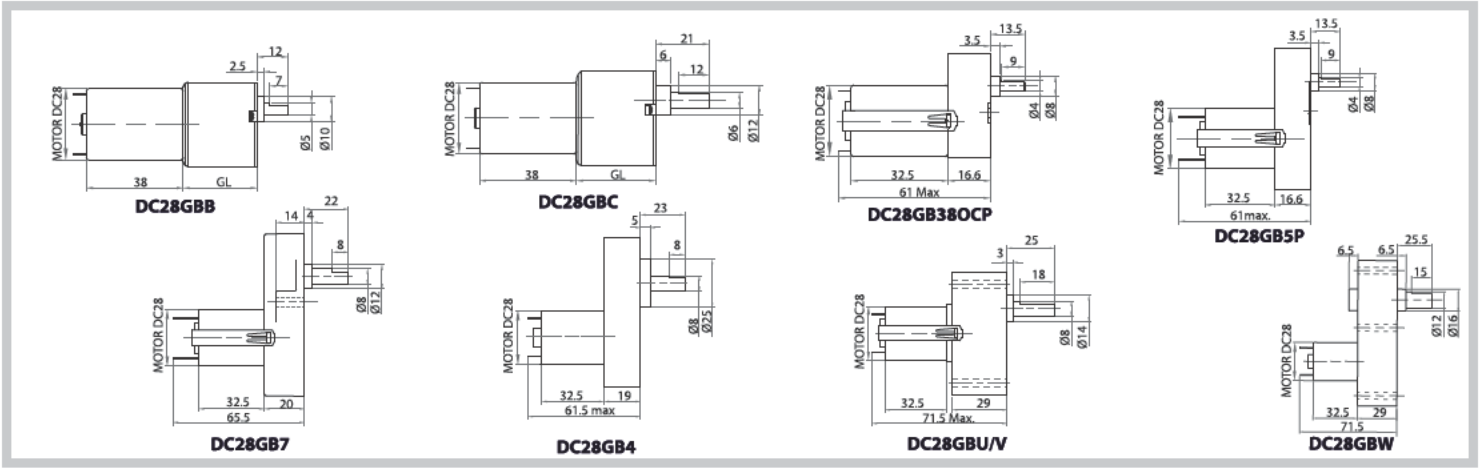
Mechtex	Physical data	No Load data			Data at max efficiency						Stall	
MODEL No.	Dim. mm	Voltage	Speed	No load	Speed	Current	Torque	Effic.	Power	Power	Torque	Current
	Dia x height	V DC	RPM	Current A	RPM	Amps	Ncm	(%)	W(out)	W(in)	Ncm	Amps
A28	27.5 x 32.5	24	5000	0.040	3945	0.099	0.280	55	1.170	2.109	1.360	0.350
A28	27.5 x 32.5	12	2500	0.035	1577	0.077	0.210	40	0.343	0.863	0.610	0.171
A28	27.5 x 32.5	6	1200	0.032	630	0.051	0.090	23	0.059	0.253	0.250	0.085
B28	27.5 x 32.5	12	4800	0.080	3536	0.224	0.350	49	1.296	2.633	2.960	1.330
B28	27.5 x 32.5	6	2400	0.070	1537	0.143	0.190	38	0.311	0.825	0.730	0.364
B28	27.5 x 32.5	3	1200	0.070	577	0.105	0.120	25	0.070	0.285	0.280	0.176
W28	28.0 x 38.0	24	7500	0.100	6410	0.368	0.880	70	5.791	8.311	5.600	1.924
W28	28.0 x 38.0	12	3700	0.090	3000	0.259	0.590	63	1.808	2.883	3.040	1.059
W28	28.0 x 38.0	6	1800	0.075	1387	0.169	0.310	51	0.449	0.884	1.460	0.542

Ordering Data (e.g.)

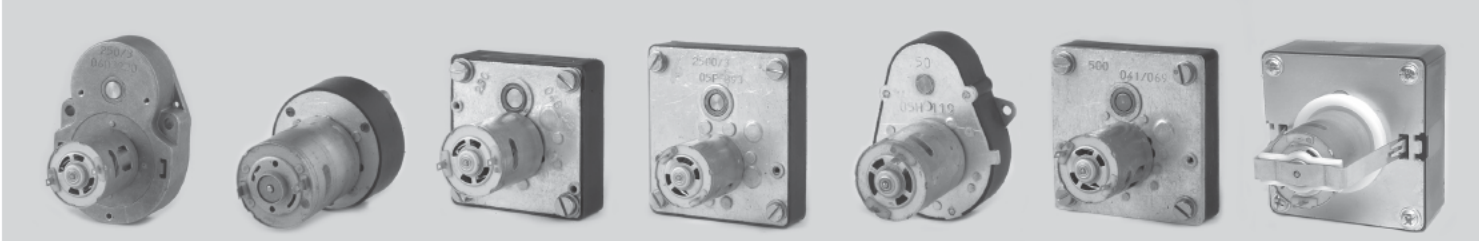
A28 N D2 N 5P 25A S R

- Direction -Reversible
- Shaft - Standard
- Ratio - 25:1
- Gearbox - GB5P
- Mounting -with snap clip
- Voltage -12V DC
- Approval - standard
- Motor -DC28a series

Assembly Drawings



Photographs



DC30 Combinations

DC Geared Motors

Design

DC30 Series motors are DC motors (Outsourced) that are used in combination with many Mechtex gearheads. Depending on the application, output speed, load applied etc the type of gearhead can be selected. Various types of gears i.e poly acetal, sintered iron, brass, SRBF (helical) & steel gears can be used based on the load considerations. Poly acetal or sintered gears usually are used for noise dampening & complete poly acetal gears are used when the output torque required is less. All bearings are permanently lubricated and therefore require no maintenance.

Ordering Data (e.g.)

B30 N D2 N 5P 25A S R

- Direction -Reversible
- Shaft - Standard
- Ratio - 25:1
- Gearbox - GB5P
- Mounting -with snap clip
- Voltage -12V DC
- Approval - standard
- Motor -DC30 series

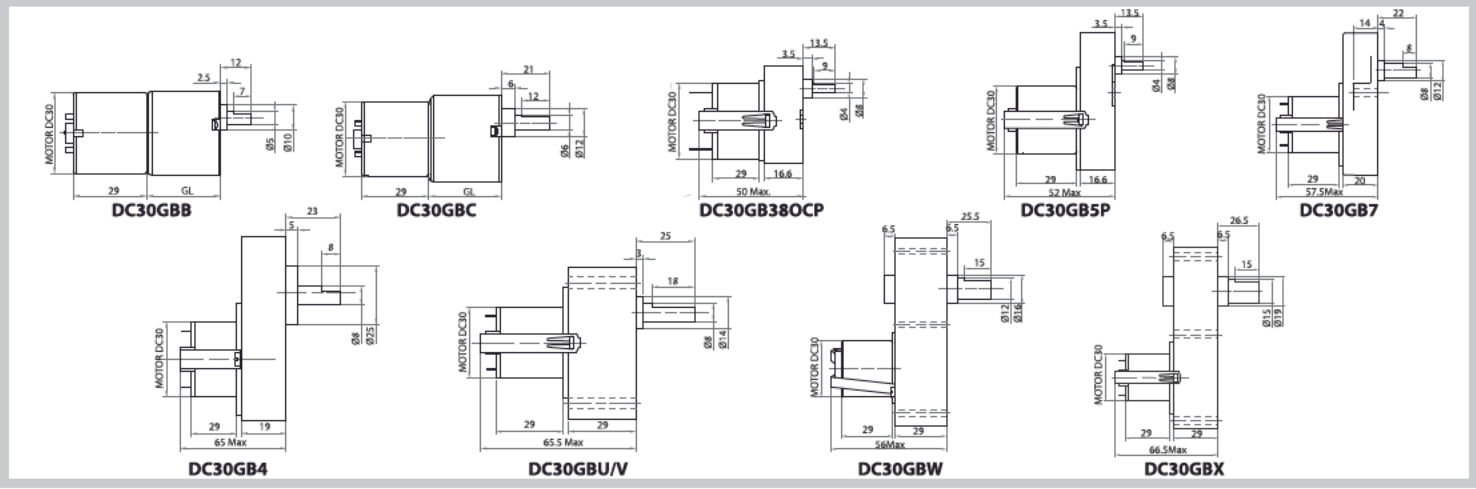
Standard Data

Motor Type		PM Brushed dc motor
Combination with Mechtex Gear Series		GB 2/5P/5H, GB 38OCP, GB B/C/L, GB 3/4/7/8, GB V/U/W/X
Standard motor voltages	V	24, 12, 6 & 3 (others on request)
Weight	g	75
Enclosure	IP	30
Mounting		By snap clip or by screws
Life expectancy		Approx 500 hours @ max efficiency
Direction		Reversible

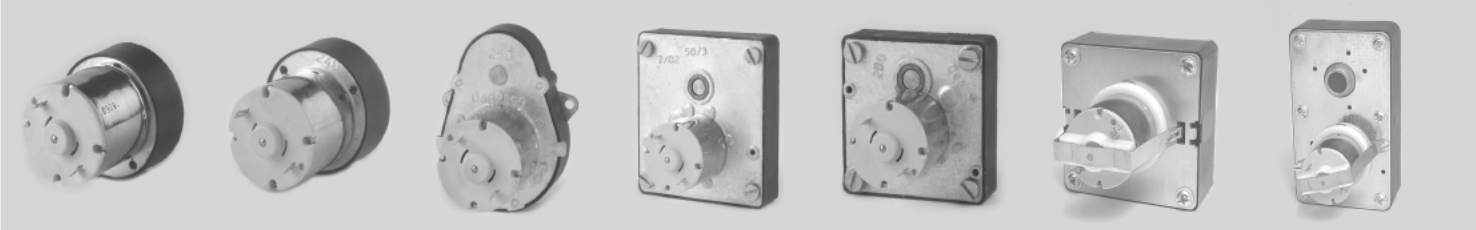
Technical Data

Mechtex	Physical data	No Load data			Data at max efficiency						Stall	
MODEL No.	Dim. mm	Voltage	Speed	No load	Speed	Current	Torque	Effic.	Power	Power	Torque	Current
	Dia X height	V DC	RPM	Current A	RPM	Amps	Ncm	(%)	W(out)	W(in)	Ncm	Amps
A30	32.5 X 29	24	6200	0.060	5000	0.210	0.620	62.31	3.170	5.040	3.200	0.900
A30	32.5 X 29	12	3100	0.045	2345	0.146	0.350	49	0.847	1.713	1.420	0.465
A30	32.5 X 29	6	1500	0.035	1100	0.090	0.160	36	0.183	0.508	0.660	0.237
B30	32.5 X 29	12	6200	0.120	4990	0.438	0.560	55	2.866	5.254	3.070	1.900
B30	32.5 X 29	6	3100	0.100	2216	0.294	0.390	51	0.892	1.734	1.710	1.041
B30	32.5 X 29	3	1500	0.090	980	0.195	0.230	41	0.229	0.560	0.820	0.533
M30	32.5 X 29	24	2500	0.025	1752	0.070	0.39	45	0.705	1.578	1.460	0.188
M30	32.5 X 29	12	1200	0.020	704	0.049	0.22	32	0.163	0.505	0.680	0.096

Assembly Drawings



Photographs



DC32 Combinations

DC Geared Motors

Design

DC32 Series motors are DC motors (Outsourced) that are used in combination with many Mechtex gearheads. Depending on the application, output speed, load applied etc the type of gearhead can be selected. Various types of gears i.e poly acetal, sintered iron, brass, SRBF (helical) & steel gears can be used based on the load considerations. Poly acetal or sintered gears usually are used for noise dampening & complete poly acetal gears are used when the output torque required is less. All bearings are permanently lubricated and therefore require no maintenance.

Ordering Data (e.g.)

B32 N D2 N 5H 50A S R

- Direction -Reversible
- Shaft - Standard
- Ratio - 50:1
- Gearbox - GB5H
- Mounting -with snap clip
- Voltage -12V DC
- Approval - standard
- Motor -DC32 series

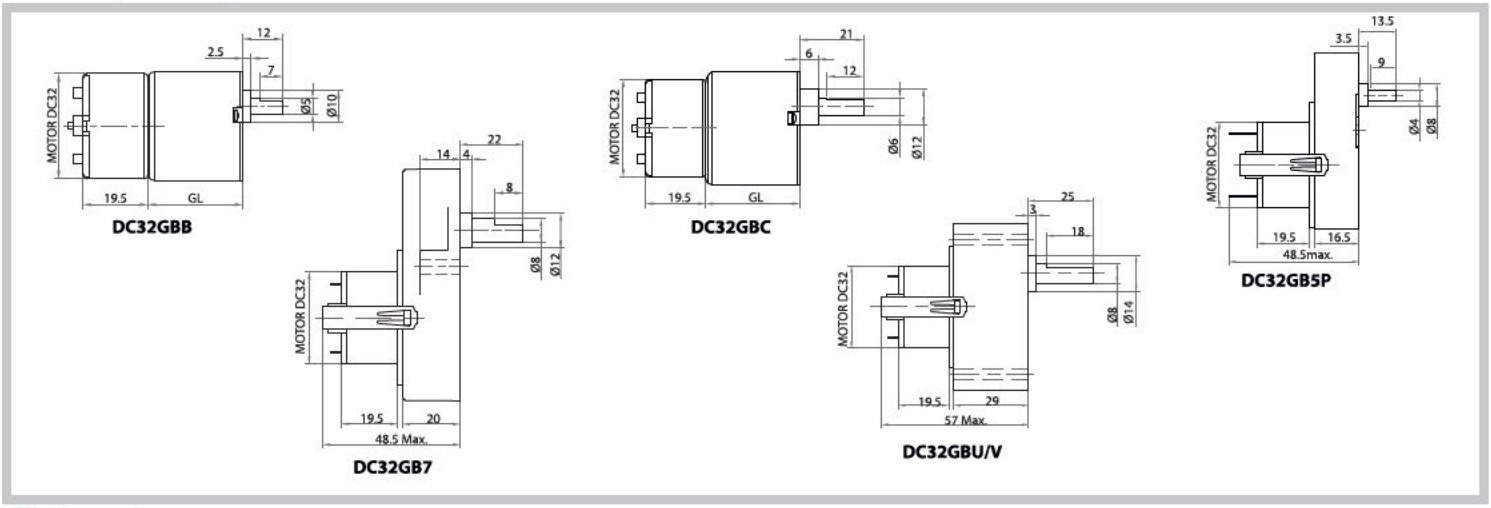
Standard Data

Motor Type		PM Brushed dc motor
Combination with Mechtex Gear Series		GB 2/5P/5H, GB 38OCP, GB B/C/L, GB 3/4/7/8, GB V/U/W/X
Standard motor voltages	V	24, 12, 6 & 3 (others on request)
Weight	g	40
Enclosure	IP	30
Mounting		By snap clip or by screws
Life expectancy		Approx 500 hours @ max efficiency
Direction		Reversible

Technical Data

Mechtex	Physical data	No Load data			Data at max efficiency						Stall	
MODEL No.	Dim. mm	Voltage	Speed	No load	Speed	Current	Torque	Effic.	Power	Power	Torque	Current
	Dia X height	V DC	RPM	Current A	RPM	Amps	Ncm	(%)	W(out)	W(in)	Ncm	Amps
A32	32 X 19.5	24	6000	0.025	4740	0.075	0.200	54	0.966	1.791	0.990	0.305
A32	32 X 19.5	12	3000	0.015	2319	0.045	0.110	50	0.266	0.529	0.530	0.164
A32	32 X 19.5	6	1500	0.012	1055	0.032	0.070	42	0.076	0.179	0.260	0.086
B32	32 X 19.5	12	5600	0.035	4653	0.111	0.180	67	0.883	1.318	1.200	0.604
B32	32 X 19.5	6	2700	0.030	2273	0.074	0.110	62	0.256	0.412	0.640	0.337
B32	32 X 19.5	3	1350	0.030	1086	0.047	0.060	60	0.070	0.116	0.330	0.175
E32	32 X 19.5	2.5	2000	0.028	1421	0.152	0.144	57	0.210	0.370	0.482	0.452

Assembly Drawings



Photographs

DC38 Combinations

DC Geared Motors

Design

DC38 Series motors are DC motors (Outsourced) that are used in combination with many Mechtex gearheads. Depending on the application, output speed, load applied etc the type of gearhead can be selected. Various types of gears i.e poly acetal, sintered iron, brass, SRBF (helical) & steel gears can be used based on the load considerations. Poly acetal or sintered gears usually are used for noise dampening & complete poly acetal gears are used when the output torque required is less. All bearings are permanently lubricated and therefore require no maintenance.

Standard Data

Motor Type		PM Brushed dc motor
Combination with Mechtex Gear Series		GB 5P/5H, GB 38OCP, GB C, GB 3/4/7/8, GB V/U/W/X
Standard motor voltages	V	24, 12, 6 & 3 (others on request)
Weight	g	220
Enclosure	IP	20
Mounting		By screws
Life expectancy		Approx 500 hours @ max efficiency
Direction		Reversible

Technical Data

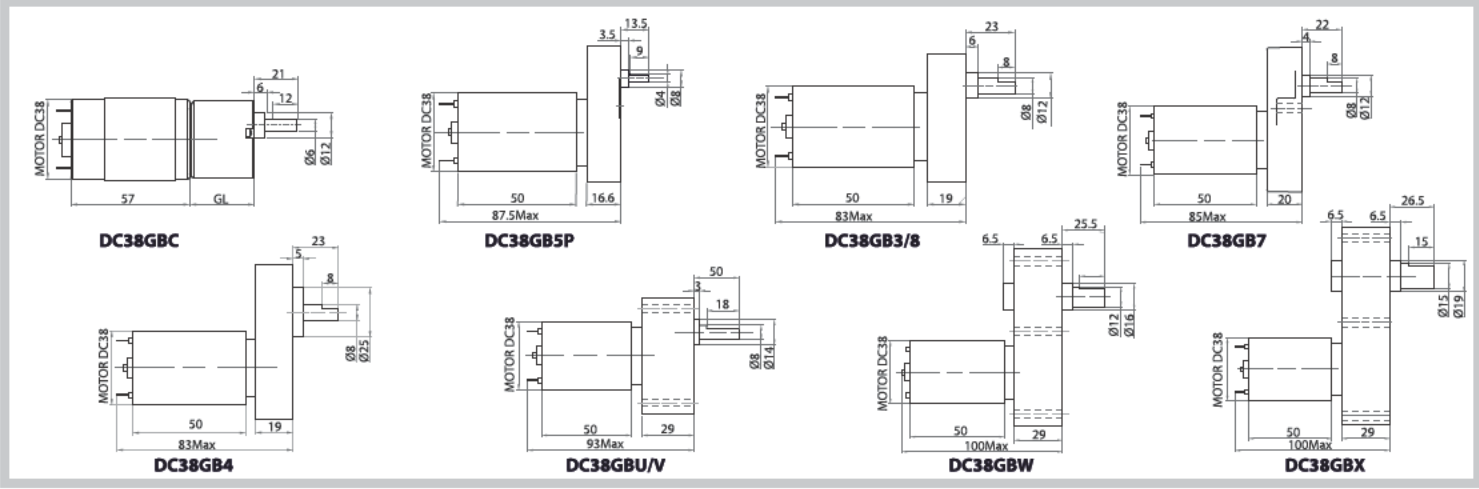
Mechtex	Physical data	No Load data			Data at max efficiency						Stall	
MODEL No.	Dim. mm	Voltage	Speed	No load	Speed	Current	Torque	Effic.	Power	Power	Torque	Current
	Dia X height	V DC	RPM	Current A	RPM	Amps	Ncm	(%)	W(out)	W(in)	Ncm	Amps
A38	36.3 X 50.1	24	5000	0.090	4184	0.480	1.780	69	7.661	11.103	12.700	2.860
A38	36.3 X 50.1	12	2500	0.080	1998	0.308	1.060	62	2.183	3.543	6.290	1.437
A38	36.3 X 50.1	6	1200	0.080	821	0.216	0.650	45	0.549	1.208	2.480	0.593
B38	36 X 50.1	12	5000	0.200	3747	0.867	1.550	59	5.995	10.186	7.840	3.490
B38	36 X 50.1	6	2500	0.180	1845	0.426	0.680	54	1.287	2.367	3.550	1.664
B38	36 X 50.1	3	1200	0.160	754	0.314	0.430	42	0.339	0.803	1.580	0.794
M38	36.0 X 50.1	24	2800	0.080	2198	0.186	1.070	55	2.418	4.377	4.610	0.642
M38	36.0 X 50.1	12	1350	0.070	890	0.139	0.660	38	0.606	1.599	2.100	0.315
M38	36.0 X 50.1	6	580	0.065	382	0.086	0.290	25	0.117	0.463	0.900	0.156

Ordering Data (e.g.)

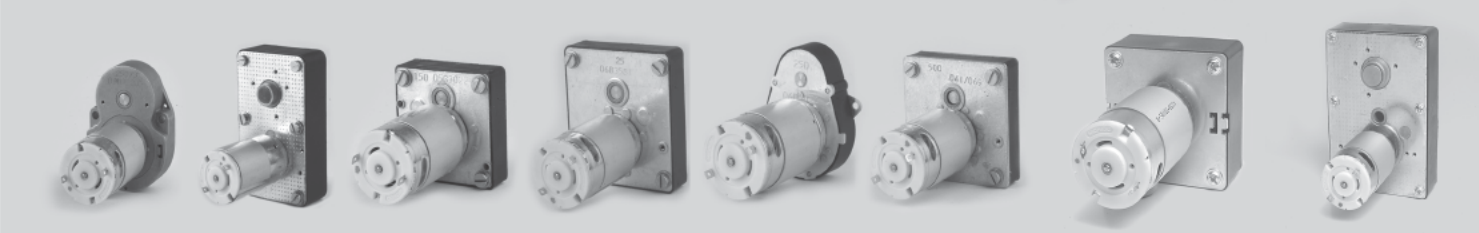
A38 N D1 S 4A 25A S R

- Direction -Reversible
- Shaft - Standard
- Ratio - 25:1
- Gearbox - GB4
- Mounting -with screw clip
- Voltage -24V DC
- Approval - standard
- Motor -DC38a series

Assembly Drawings



Photographs



DC42/DC52 Combinations

DC Geared Motors

Design

DC42/ DC52 Series motors are DC motors (Outsourced) that are used in combination with some Mechtex gearheads. Depending on the application, output speed, load applied etc the type of gearhead can be selected. Case hardened steel gears are used due to the high torque generated by these motors. First pair of gears can be helical to damp the noise. All bearings are permanently lubricated and therefore require no maintenance.

Ordering Data (e.g.)

B52 N D1 S WA 25A S R

- B52 – Motor -DC52b series
- N – Approval standard
- D1 – Voltage -12V DC
- S – Mounting -with screw clip
- WA – Gearbox - GBW
- 25A – Ratio - 25:1
- S – Standard Shaft
- R – Direction Reversible

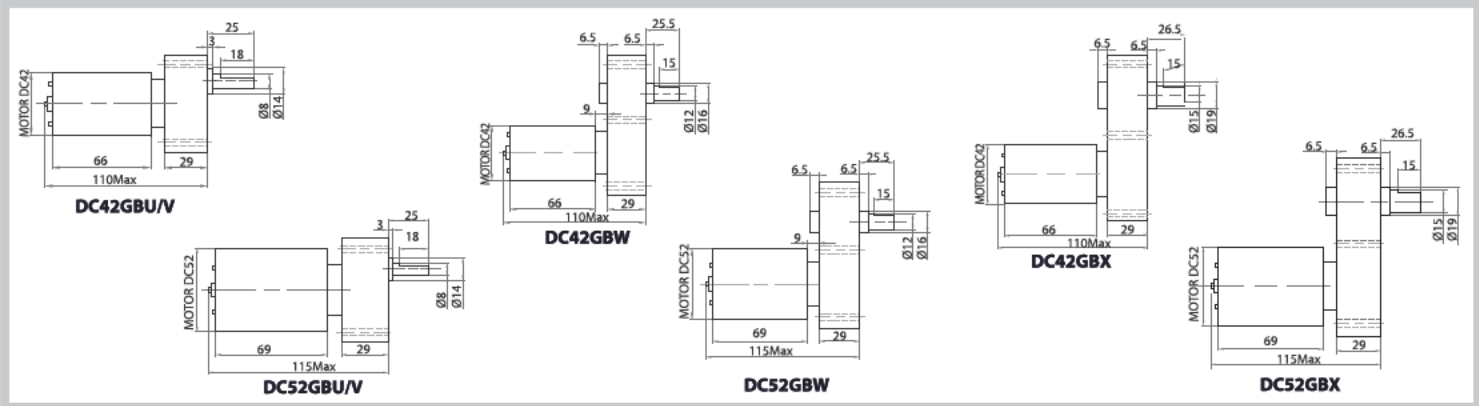
Standard Data

Motor Type		PM Brushed dc motor
Combination with Mechtex Gear Series		GB V/U, GB W/X Only
Standard motor voltages	V	24, 12, 6 & 3 (others on request)
Weight (DC42/DC52)	g	360/480
Enclosure	IP	20
Mounting		By screws
Life expectancy		Approx 500 hours @ max efficiency
Direction		Reversible

Technical Data

Mechtex	Physical data	No Load data			Data at max efficiency						Stall	
MODEL No.	Dim. mm	Voltage	Speed	No load	Speed	Current	Torque	Effic.	Power	Power	Torque	Current
	Dia X height	V DC	RPM	Current A	RPM	Amps	Ncm	(%)	W(out)	W(in)	Ncm	Amps
A42	42.2 x 66	24	5050	0.400	4120	1.362	5.69	74	24.075	32.645	40.200	8.940
A42	42.2 x 66	12	2500	0.300	2021	0.951	3.48	63	7.223	11.486	21.690	4.917
A42	42.2 x 66	6	1200	0.280	932	0.667	2.21	53	2.095	3.984	10.830	2.538
B42	42.2 x 66	12	5000	0.700	4421	3.576	6.640	70	30.147	42.986	43.270	19.897
B42	42.2 x 66	6	2500	0.620	2123	2.041	3.46	62	7.544	12.215	22.790	10.666
B42	42.2 x 66	3	1250	0.580	922	1.648	2.58	51	2.443	4.819	11.120	5.442
M42	42.4 x 66	24	2700	0.210	2312	0.508	3.01	60	7.147	11.994	16.810	2.279
M42	42.4 x 66	12	1350	0.160	1096	0.318	1.84	56	2.071	3.725	8.640	1.159
M42	42.4 x 66	6	650	0.130	472	0.218	1.10	43	0.533	1.242	3.950	0.574
A52	52.5 x 69	24	5000	0.500	4195	2.563	9.240	65	39.807	61.323	59.840	14.318
A52	52.5 x 69	12	2500	0.400	1970	1.569	5.48	59	11.087	18.809	30.070	7.090
A52	52.5 x 69	6	1250	0.350	902	0.993	3.02	48	2.797	5.875	13.55	3.320
B52	52.5 x 69	12	5050	0.900	4325	3.916	7.110	67	31.580	47.086	54.000	24.900
B52	52.5 x 69	6	2500	0.900	1881	2.864	4.850	54	9.369	17.229	24.700	11.472
B52	52.5 x 69	3	1200	0.850	810	2.170	3.350	43	2.787	6.485	12.150	5.961
M52	52.0 x 69	24	2700	0.280	2193	0.788	5.1	63	11.553	18.422	29.5	3.619
M52	52.0 x 69	12	1300	0.250	1037	0.505	2.8	51	2.961	5.804	14.2	1.889
M52	52.0 x 69	6	600	0.250	434	0.364	1.7	39	0.753	1.935	6.6	0.941

Assembly Drawings



Photographs