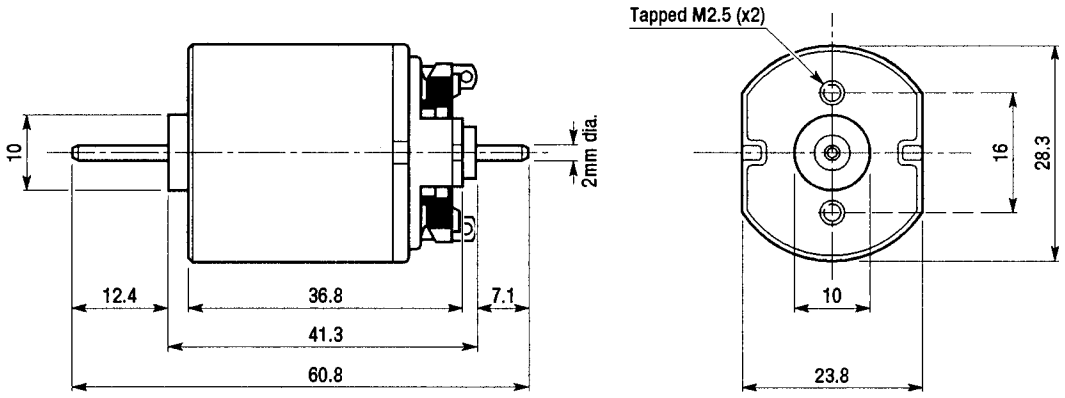
Bühler - Type 1.16.037.069 JH (1995 design)

Manufacturer - Bühler
Supplier - MSC Models Ltd.

Construction:
Flat sided totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	*12V*	*16V*
No-load speed (rpm)	10500	14000
Stalled torque (g.cm)	370	493
No-load current (A)	0.25	0.28
Stalled current (A)	4.0	5.3
Power output at 75% no-load speed (W)	7.5	13.3

Nominal gear ratios		
Express passenger and mixed traffic steam locos	22/1	29/1
Steam freight locos	29/1	39/1
Diesel and electric locos	13/1	17/1

Data source: Manufacturer's Data Sheet

Comment:
A motor suitable for supply voltages from 12 to 18. Despite its small size its high speed gives it a power output sufficient for all likely duties. It is not considered suitable for supply voltages above 18.

Note: This current design is made in the USA and is slightly wider than previous designs. It may not fit between some frames built with standard spacers.

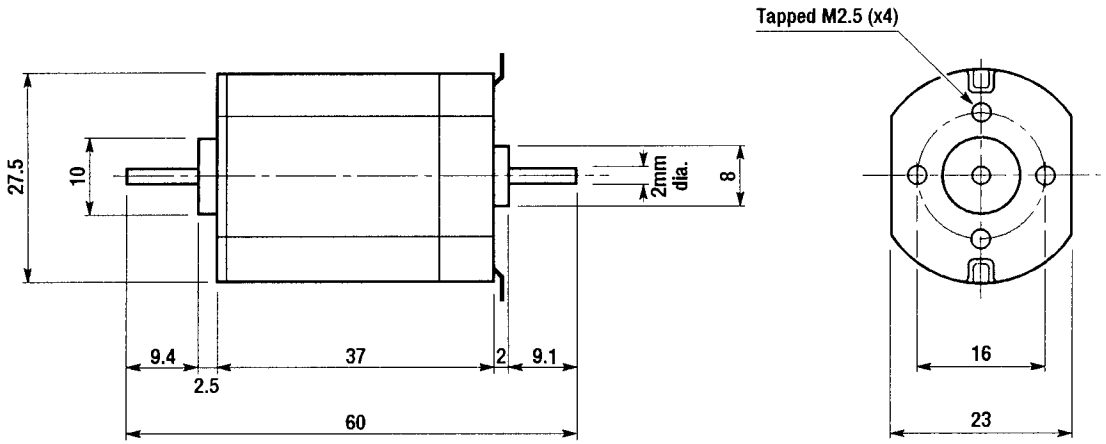
Available with 25/1 gearbox.

Bühler - Type 1.16.037.038

JH (pre 1994, 5 pole design) (serial nos 1200 and above)

Manufacturer - Bühler
Supplier - MSC Models Ltd.

Construction:
Flat sided totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2 V higher to allow for feeder and contact drop.

Performance at	*12V*	*16V*
No-load speed (rpm)	11500	15330
Stalled torque (g.cm)	264	352
No-load current (A)	0.25	0.28
Stalled current (A)	3.0	4.0
Continuous rated current (A)	0.9	0.9
Power output at 75% no-load speed (W)	8.2	14.6

Nominal gear ratios		
Express passenger and mixed traffic steam locos	24/1	32/1
Steam freight locos	32/1	43/1
Diesel and electric locos	14/1	18/1

Data source: Manufacturer's Data Sheet and Guild test

Comment:
A motor suitable for supply voltages from 12 to 18. Despite its small size its high speed gives it a power output sufficient for all likely duties. It is not considered suitable for supply voltages above 18.

Available with 25/1 gearbox.

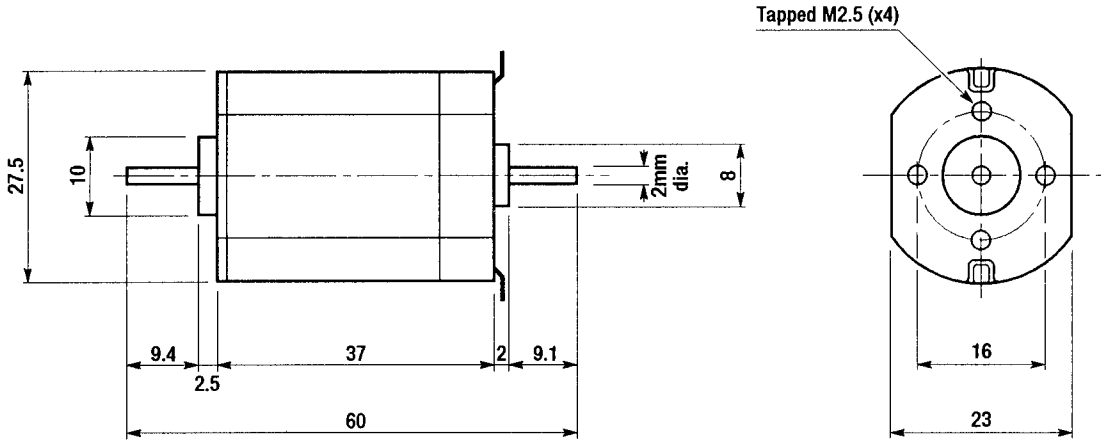
Bühler

JH (Early 3 pole design) (serial nos 1199 and below)

(No longer in production)

Manufacturer - Bühler
Supplier - MSC Models Ltd.

Construction:
Flat sided totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2 V higher to allow for feeder and contact drop.

Performance at	*12V*	*16V*	*22V*
No-load speed (rpm)	5720	7626	10486
Stalled torque (g.cm)	200	267	367
No-load current (A)	0.09	0.11	0.13
Stalled current (A)	1.3	1.73	2.38
Power output at 75% no-load speed (W)	2.2	3.9	7.4

Nominal gear ratios			
Express passenger and mixed traffic steam locos	-	16/1	22/1
Secondary duty passenger and freight locos	16/1	21/1	29/1

Data source: Guild test

Comment:
This motor is included for historical record. It was superseded by the second version (shown on data sheet M1/1.2) in about 1985. On 12 volts the power output was adequate only for secondary passenger and slow freight duties unless fitted with high efficiency gears but it was suitable for use on up to 24 volts.

It was available with a 25/1 gearbox.

Bühler - Type 1.16.037.054

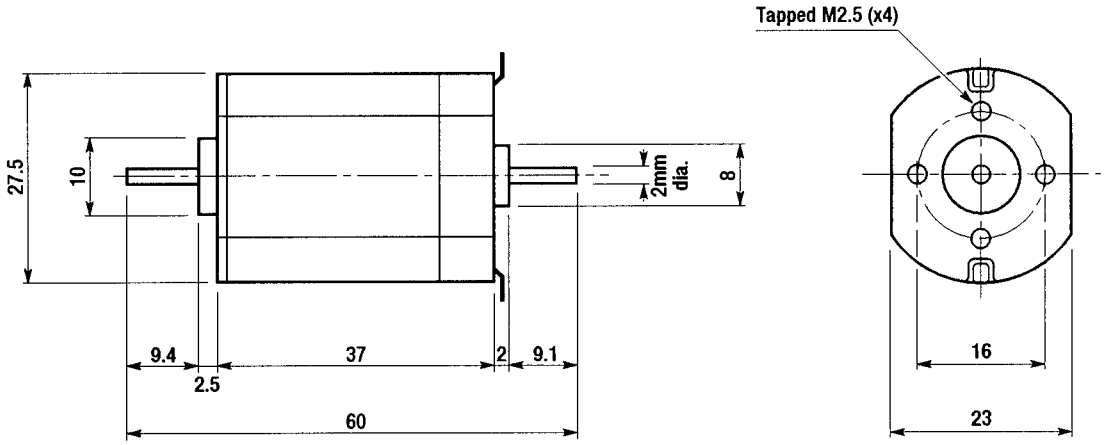
CCW

Manufacturer - Bühler

Supplier - CCW Model Manufacturing Co.

Construction:

Flat sided, totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	*12V*
No-load speed (rpm)	13500
Stalled torque (g.cm)	363
No-load current (A)	0.3
Stalled current (A)	4.5
Power output at 75% no-load speed (W)	9.5

Nominal gear ratios	
Express passenger and mixed traffic steam locos	28/1
Secondary duty passenger and freight locos	38/1
Diesel and electric locos	16/1

Data source: Manufacturer's Data Sheet

Comment:

Despite its small size its high speed gives it a power output sufficient for all likely duties. It is not considered suitable for supply voltages above 14.

Bühler - Type 1.13.021.101

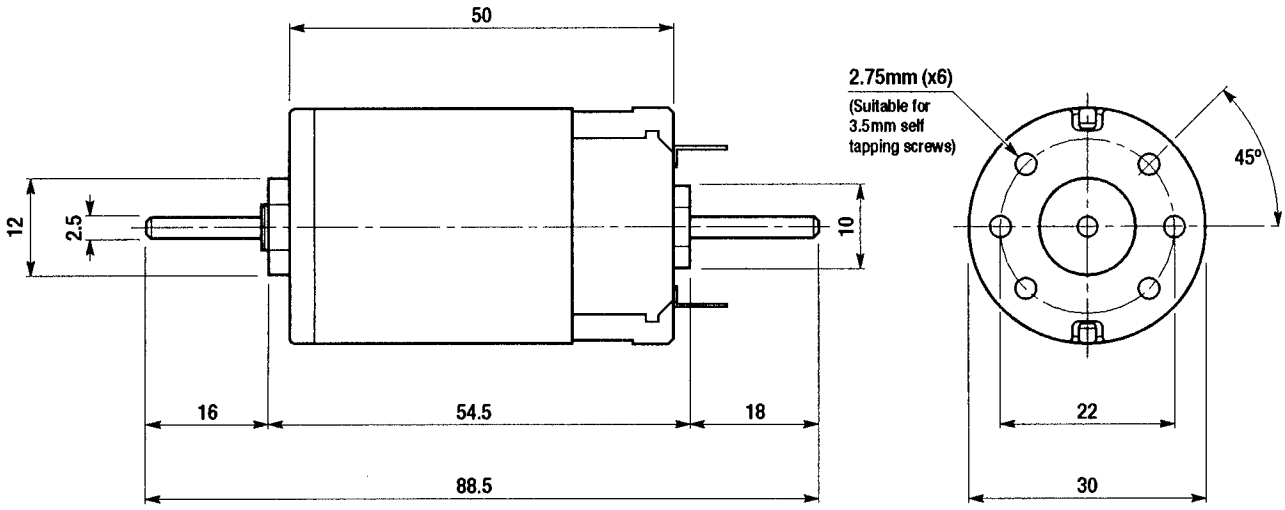
Crailcrest

Manufacturer - Bühler

Supplier - MSC Models Ltd. and agents.

Construction:

Cylindrical totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	***12V***	***16V***	***22V***
No-load speed (rpm)	6100	8130	11180
Stalled torque (g.cm)	592	789	1085
No-load current (A)	0.14	0.18	0.20
Stalled current (A)	3.2	4.2	5.8
Power output at 75% no-load speed (W)	7.0	12.0	23.0

Nominal gear ratios			
Express passenger and mixed traffic steam locos	13/1	17/1	23/1
Steam freight locos	17/1	23/1	31/1
Diesel and electric locos	7/1	10/1	13/1

Data source: Manufacturer's Data Sheet (1994)
Up-dates 1981 Guild test data.

Comment:

A powerful medium speed motor suitable for all Gauge O applications on supply voltages from 14 to 24 if the appropriate gear ratio is used.

Available with 14/1, 24/1 and 33.3/1 gearboxes.

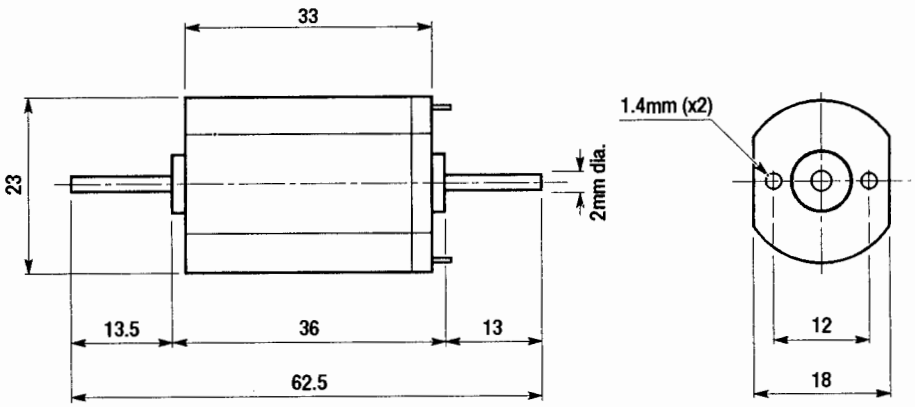
This motor is available from other traders either under its Bühler Type Number or by the MSC name Crailcrest.

Mashima - Type 1833

Mashima 1833

Manufacturer - Mashima
Supplier - Various

Construction:
Flat sided totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	***12V***	***16V***
No-load speed (rpm)	10000	13300
Stalled torque (g.cm)	162	216
No-load current (A)	0.07	0.08
Stalled current (A)	1.5	2.0
Power output at 75% no load speed (W)	3.1	5.5

Nominal gear ratios		
Secondary duty passenger and freight locos	28/1	38/1
Two motor diesel and electric locos	12/1	16/1
Diesel and electric multiple units	10/1	13/1

Data source: Guild Bench Test (11/9/94)

Comment:
Suitable for secondary duty steam locomotives, diesel and electric multiple units and two motor diesel and electric locomotives.

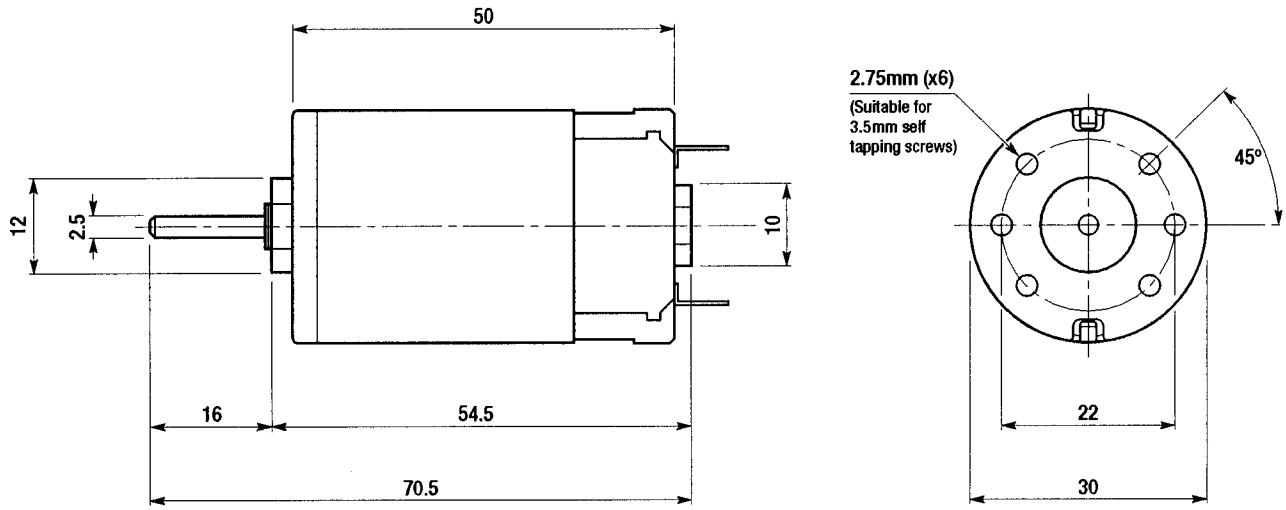
Bühler - Type 1.13.021.158

Manufacturer - Bühler

Supplier - Surplus trader.

Construction:

Cylindrical totally enclosed frame, single shaft extension, end mounting screws.



Nominal voltage:12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2 V higher to allow for feeder and contact drop.

Performance at	***12V***	***16V***
No-load speed (rpm)	9200	12267
Stalled torque (g.cm)	712	949
No-load current (A)	0.06	0.07
Stalled current (A)	6.9	8.0
Power output at 75% no-load speed (W)	12.6	23.2

Nominal gear ratios		
Express passenger and mixed traffic steam locos	19/1	27/1
Secondary duty passenger and freight locos	26/1	35/1
Diesel and electric locos	11/1	15/1

Data source: Guild test (1992)

Comment:

This very powerful high speed motor was designed for a printer drive and is occasionally available from surplus traders. Operation on higher than 18 volt supply is not advised.

Bühler - Type 1.13.021.609

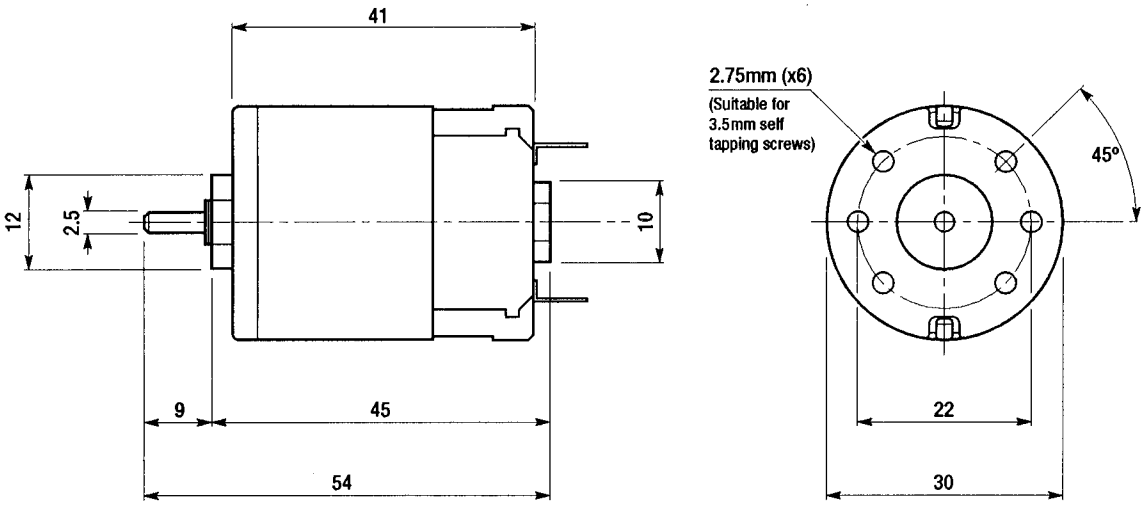
'Proops or short Bühler'

Manufacturer - Bühler

Supplier - Proops and Surplus traders

Construction:

Cylindrical totally enclosed frame, single shaft extension, end mounting screws.



Nominal voltage: 24

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2 V higher to allow for feeder and contact drop.

Performance at	*12V*	*16V*	*22V*
No-load speed (rpm)	5145	6860	9432
Stalled torque (g.cm)	270	360	495
No-load current (A)	0.04	0.05	0.06
Stalled current (A)	1.2	1.6	2.2
Power output at 75% no-load speed (W)	2.7	5.03	9.0

Nominal gear ratios			
Express passenger and mixed traffic steam locos	-	14/1	20/1
Secondary duty passenger and freight locos	14/1	19/1	26/1
Diesel and electric locos	6/1	8/1	11/1

Data source: Guild test (11/11/93)

Comment:

This motor is no longer in production but sometimes appears on the retail market. It was originally fitted to Ronson hair dryers and when production of these ceased a large number of surplus motors were bought by Proops, then in Tottenham Court Road, and some other traders. It is suitable for all applications on 18 and 24 volts and for secondary duties on 12 Volts.

Bühler - Type 1.16.011.139

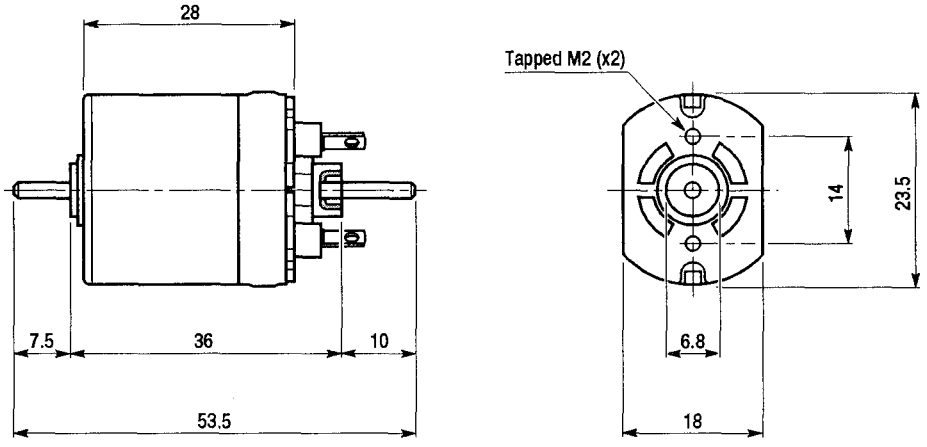
SM (MSC)

Manufacturer - Bühler

Suppliers - MSC Models and AMR Electronics.

Construction:

Flat sided, totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	***12V***	***16V***
No-load speed (rpm)	10000	13300
Stalled torque (g.cm)	120	160
No-load current (A)	0.1	0.12
Stalled current (A)	1.0	1.3
Power output at 75% no-load speed (W)	2.3	4.1

Nominal gear ratios		
Secondary duty passenger and freight locos	28/1	38/1
Two motor diesel and electric locos	14/1	19/1
Diesel and electric multiple units	12/1	16/1

Data source: Manufacturer's Data Sheet

Comment:

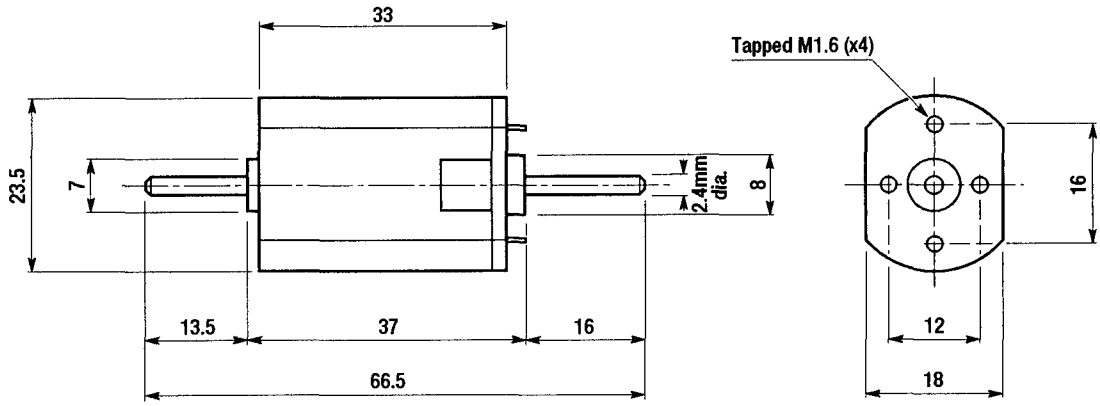
Suitable for secondary duty steam locomotives, diesel and electric multiple units and two motor diesel and electric locomotives.

Sagami - Type D-241833-CW

Sagami 1833

Manufacturer - Sagami
Supplier - Mega Motors

Construction:
Cylindrical totally enclosed frame, double shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2 V higher to allow for feeder and contact drop.

Performance at	***12V***	***16V***	***22V***
No-load speed (rev/min)	7501	10000	13750
Stalled torque (g.cm)	122	163	224
No-load current (A)	0.13	0.15	0.17
Stalled current (A)	0.98	1.31	1.8
Power output at 75% no-load speed (W)	1.8	3.1	5.9

Nominal gear ratios			
Secondary duty passenger and freight locos	21/1	28/1	38/1
Diesel and electric locos	9/1	12/1	16/1
Diesel and electric multiple units	7/1	10/1	14/1

Data source: Manufacturer's Data Sheet

Comment:
Suitable for secondary duty steam locos, two motor diesel and electric locos and diesel and electric multiple units.

Available with 13/1, 20/1, 26/1 and 40/1 gearboxes.

Sagami - Type - S-2240CS(CW)

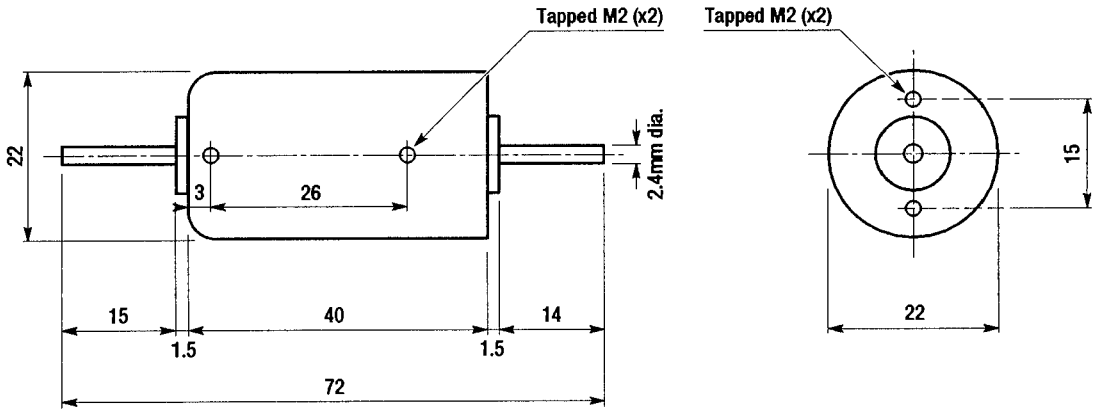
Sagami 2240

Manufacturer - Sagami

Supplier - Mega Motors

Construction:

Enclosed cylindrical motor.double shaft extension, fixing screws on end and side.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	*12V*	*16V*
No-load speed (rpm)	9400	12530
Stalled torque (g.cm)	132	178
No-load current (A)	0.10	0.12
Stalled current (A)	1.25	1.67
Power output at 75% no-load speed (W)	2.4	4.3

Nominal gear ratios		
Express passenger and mixed traffic steam locos	-	26/1
Secondary duty passenger and freight locos	26/1	35/1
Diesel and electric locos	11/1	15/1
Diesel and electric multiple units	9/1	12/1

Data source: Manufacturer's Data Sheet

Comment:

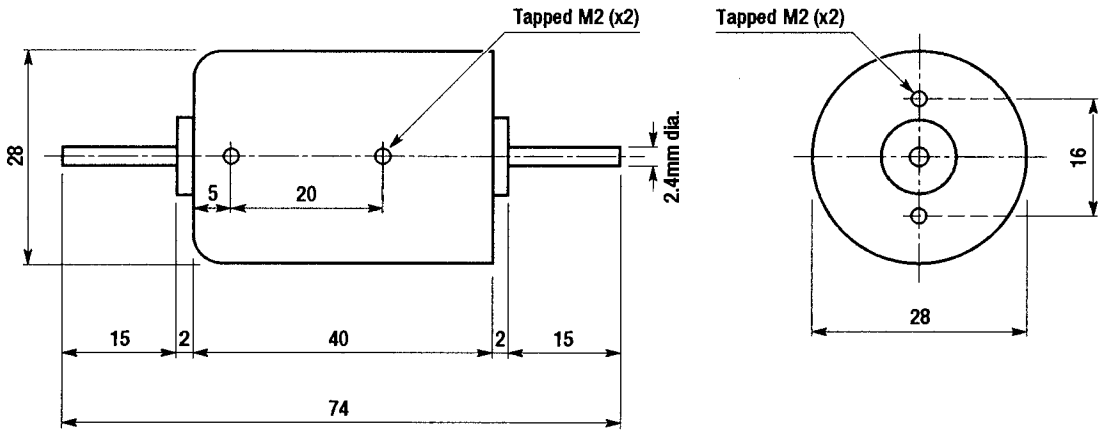
Suitable for secondary duties on 12 volts and most applications on 16 volts. Available with 13/1, 20/1, 26/1 and 40/1 gearboxes.

Sagami - Type - S-2840CS

Sagami 2840

Manufacturer - Sagami
Supplier - Mega Motors

Construction:
Enclosed cylindrical motor, double shaft extension, fixing screws on end and side



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	***12V***	***16V***	***22V***
No-load speed (rpm)	6500	8670	11917
Stalled torque (g.cm)	422	563	773
No-load current (A)	0.07	0.08	0.09
Stalled current (A)	2.44	3.25	4.47
Power output at 75% no load speed (W)	5.3	9.4	17.8

Nominal gear ratios			
Express passenger and mixed traffic steam locos	14/1	18/1	25/1
Secondary duty passenger and freight locos	18/1	24/1	33/1
Diesel and electric locos	8/1	10/1	14/1
Diesel and electric multiple units	7/1	9/1	12/1

Data source: Manufacturer's Data Sheet

Comment:
A powerful medium speed motor suitable for all Gauge O applications on supply voltages from 14 to 24. Available with 13/1, 20/1, 26/1 and 40/1 gearboxes.

Bühler - Type 1.16.011.180

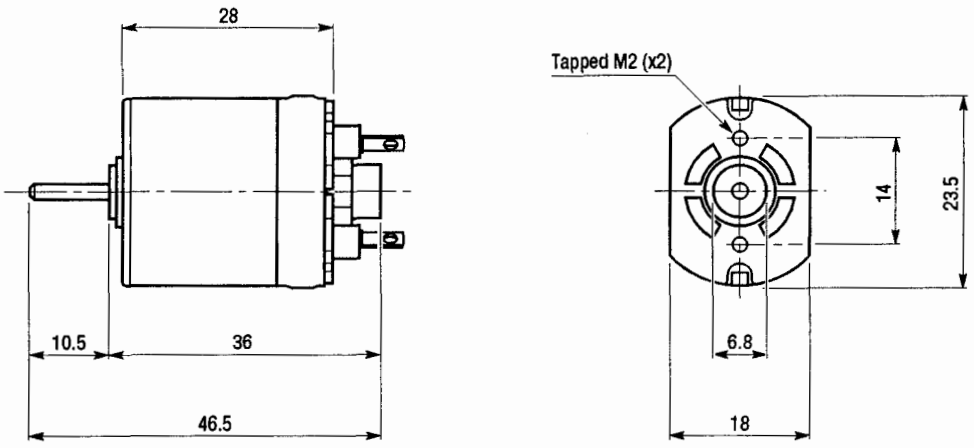
AMR 4

Manufacturer - Bühler

Suppliers - AMR Electronics, Ultrascale and others.

Construction:

Flat sided, totally enclosed frame, single shaft extension, end mounting screws.



Nominal voltage: 12

Note: Voltage is at the motor terminals. It is recommended that the supply voltage be 2V higher to allow for feeder and contact drop.

Performance at	***12V***	***16V***
No-load speed (rpm)	10000	13300
Stalled torque (g.cm)	120	160
No-load current (A)	0.1	0.12
Stalled current (A)	1.0	1.3
Power output at 75% no-load speed (W)	2.3	4.1

Nominal gear ratios		
Secondary duty passenger and freight locos	28/1	38/1
Two motor diesel and electric locos	14/1	19/1
Diesel and electric multiple units	12/1	16/1

Data source: Manufacturer's Data Sheet

Comment:

Suitable for secondary duty steam locomotives, diesel and electric multiple units and two motor diesel and electric locomotives.