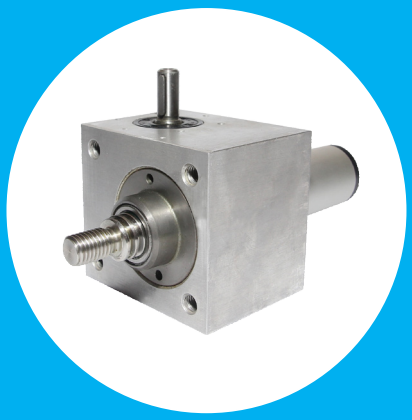

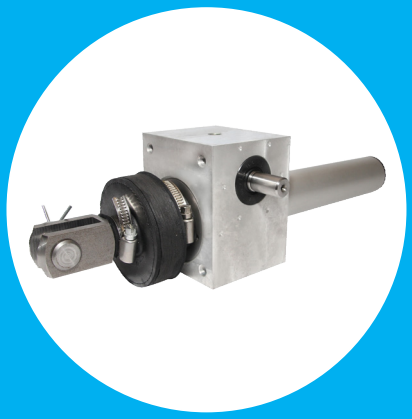

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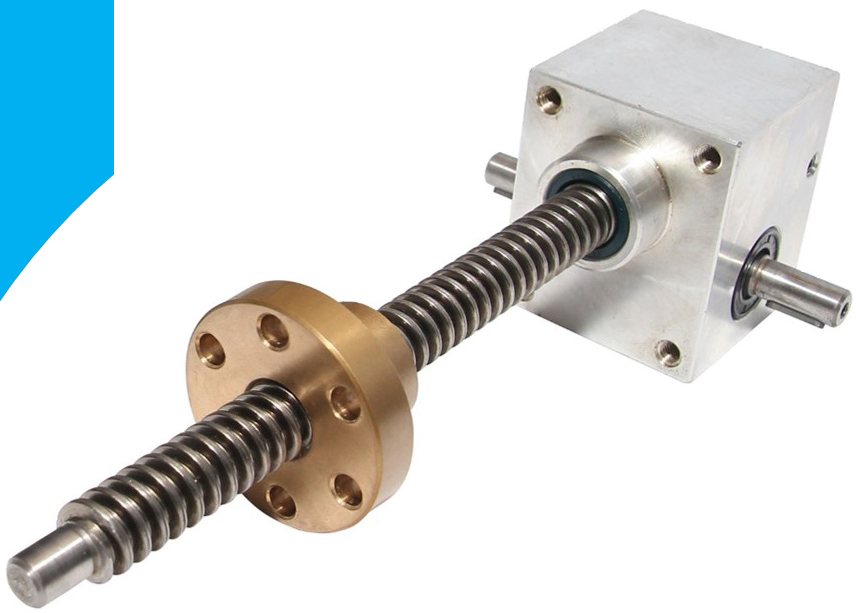
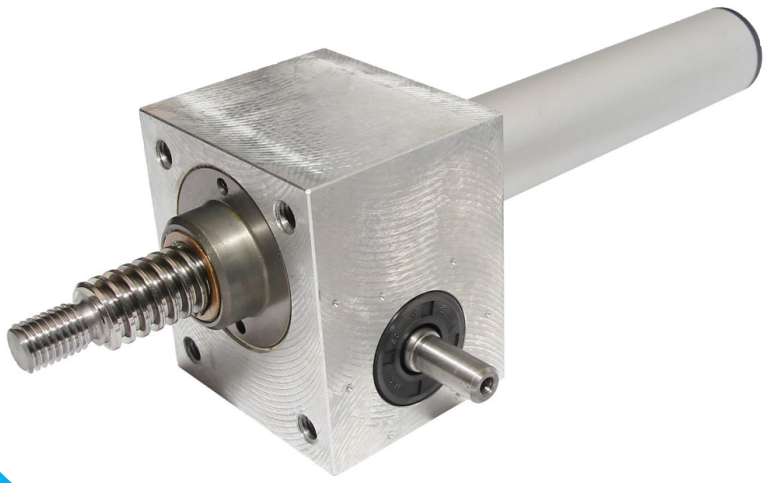
LIFTING SYSTEMS

STOCK CATALOGUE

EDITION 01





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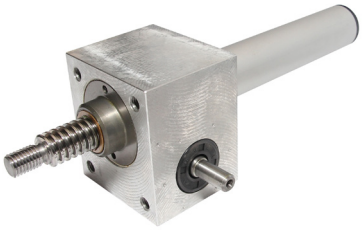
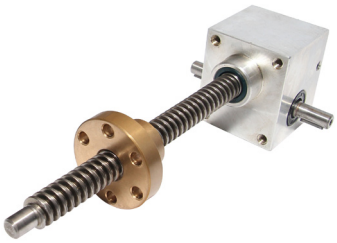
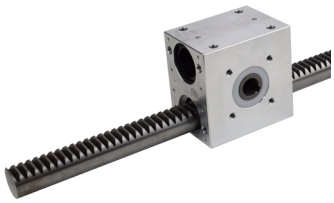
Product Index



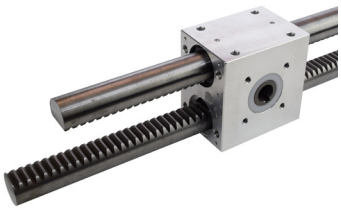
TRAV. SCREW JACKS



TRAV. NUT JACKS

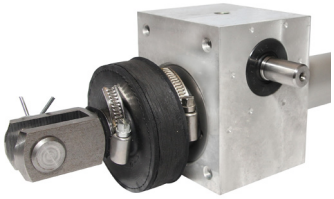


SINGLE RACK JACKS



TWIN RACK JACKS

BRONZE FLANGED NUTS



JACK BELLOW KITS

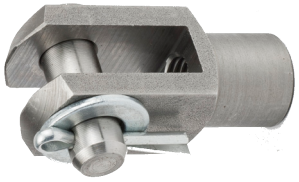
TRUNNION PLATES

TRUNNION NUTS

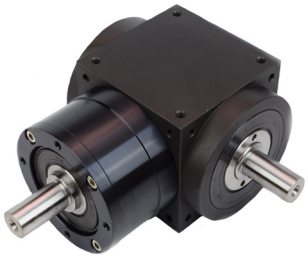
BALLSCREW NUTS

SCREW SUPPORT UNITS

TOP PLATES



CLEVIS & FORK HEADS



BEVEL GEARBOXES

COUPLINGS

CARDAN SHAFTS

PILLOW BLOCKS

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Interactive Contents

Click A Tab To Be Taken To That Section

CUBIC JACKS

RACK JACKS

BEVEL BOXES

COUPLINGS

Welcome to WMH Transmissions Ltd

WMH have been a market leader in power transmission component design and manufacture for over 50 years.

Our professional sales team and technical support staff are dedicated to quality customer service, reliability and product excellence.

With years of commercial experience, ISO 9001/2008 accreditation and a highly skilled workforce from the shop floor through to management, you can be confident in choosing WMH for all you power transmission needs.

We hold extensive stock of over £1.5 million at our headquarters in Tamworth, Staffordshire situated on junction 10 of the M42 just north of the N.E.C, Birmingham providing excellent access to the motorway network and our customers.

WMH stocks a wide range of screw and rack jacks as well as selection of bevel gearboxes and couplings allowing us to build up the perfect lifting system for you application.

Jack bodies and raw lengths of leadscrews are held in stock ready to be cut and machined in-house to suit almost any screw jack configuration possible. This flexible system, combined with a large stock of couplings and bevel gearboxes, allows WMH to produce bespoke lifting systems quickly and efficiently and despatch orders within days of being placed.

Our in-house, fully equipped CNC machine shop and years of industry experience gives us the capability to tailor any products to specific customer requirements – contact our sales team with your requirements.

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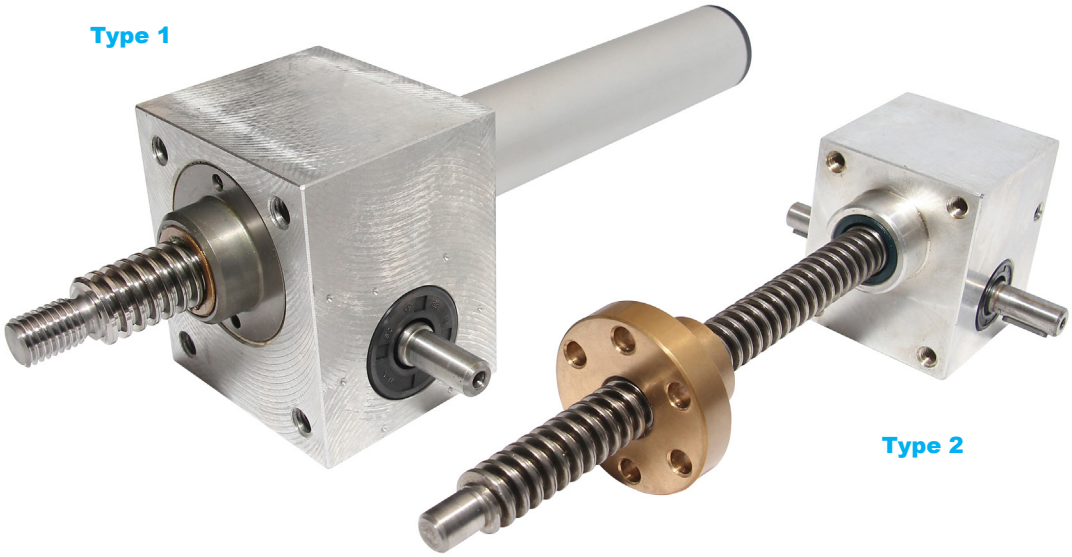
Cubic Type Screw Jacks



Cubic Jacks

- Standard worm & wheel jacks
- Cubic body mounting from all directions
- 9 jack sizes
- 2 reduction ratios per size (low & high)
- Capacities from 250kg up to 50000kg
- Aluminium bodies on smaller sizes
- Range of standard accessories available
- Travel speed up to 25 mm / second
- Special nuts and screw options available

Cubic Series Specific Accessories

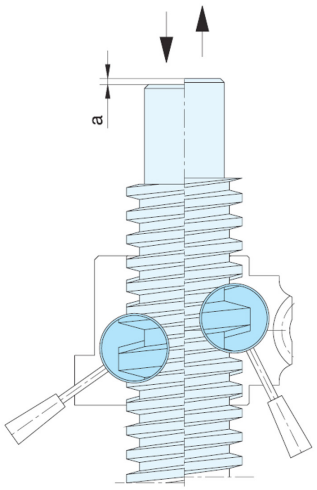
Tolerances

Operating Temperature

Screw jacks with standard lubrication have a rated working temperature range of -10 °C to +40 °C but special lubricants are available to increase this range to -30 °C to + 80 °C

Axial Play – "a"

Axial Play has no influence on positioning accuracy when loading of the jack is in one direction only (i.e. in constant compression or in constant tension) as the load is always thrust upon one flank of the screw thread only.

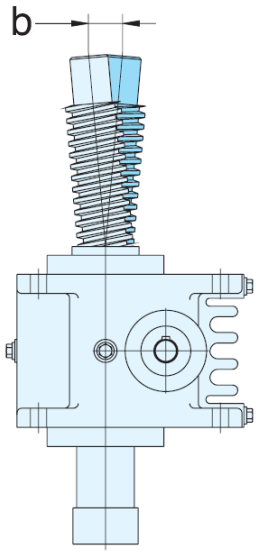


Tooth Play – "backlash"

Tooth profile play or "backlash" is a result of clearance between drive and driven teeth of the worm and wheel within the jack body. This clearance is necessary to allow for thermal expansion and correct lubrication of the mating parts to prevent binding and premature wear or failure. When new, this backlash is around 0.10 – 0.30mm and varies on the size of the components but will increase over the service life of the jack.

Radial Play – "b"

Radial play occurs only in the case of type 1 (travelling screw) jacks as a result of clearance between the outer diameter of the screw thread and the guide ring within the jack body. This clearance is typically around 0.2mm and results in radial play "b" proportional to the stroke length.



The use of whirled as opposed to rolled screw threads will help to reduce this clearance but it can never be fully removed as to allow for proper lubrication and thermal expansion.

Although screw jacks have been designed to account for a small amount of radial play, they are not designed to withstand any loads that do not act parallel to the axis of the screw – this applies to both type 1 (travelling screw) and type 2 (travelling nut) screw jacks.

WMH recommends the use of external guidance in all applications to remove any possible side loads from the screw jack which would otherwise lead to premature wear and failure – please contact our sales team for information on the range of linear guidance systems available from our stock.

Screw Thread Accuracy

Screw jacks using trapezoidal rolled leadscrews have a lead error of around 0.10mm over 300mm of thread but the use of optional whirled screw threads can reduce this down to around 0.05mm. It is possible to attain even lower pitch error via use of ballscrews as opposed to leadscrews and can yield an accuracy of 0.023mm and lower over 300mm – please contact of sales team for information on what options we offer.

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Radial Loads

Size	Fr Max. (N)	@ Ta Max. (Nm)
M0	70	1.5
M1	100	3.4
M2	200	7.1
M3	300	18
M4	500	38
M5	800	93
M6	1300	240
M7	2100	340
M8	3100	570

WMH screw jacks have rated radial forces that can be applied to the input shaft of each jack. These have been calculated for Ø ~ 30° or 330° as these are the worst case scenario for the bearings based on lifting force and rotation direction.

Although most applications use flexible couplings or cardan shafts to connect the screw jacks to drive motors, it is possible to mount and provide power via spur gears, sprockets and / or pulleys directly mounted to the input shafts of the screw jacks.

In this scenario, it is even more crucial to pay close attention to the rated radial load capacities of each screw jack being used.

A formula for calculating max power, torque and speed is provided below:

Permitted radial force (Fr) on application of force in L/2

Minimum diameter (D) for spur gear or pulleys:

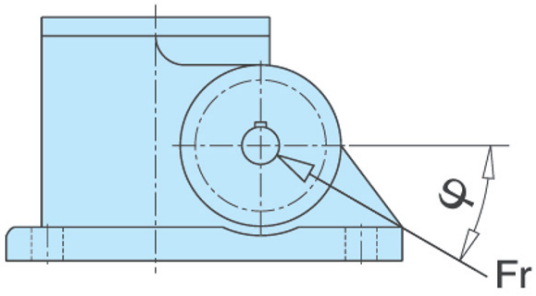
$$Dmin = \frac{19100 \times P}{Fr\ Max. \times n} = \frac{2 \times Ta}{Fr\ Max.}\ (m)$$

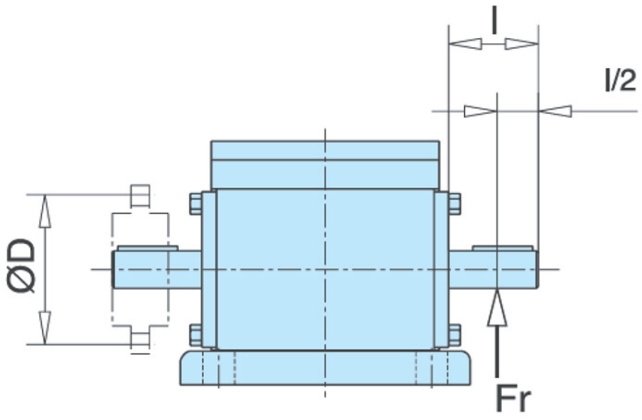
P = Power rating (kW)

Fr Max. = Maximum radial force (N) (see table, left)

N = rotating speed of input shaft (rpm)

Ta = Driving torque (Nm)



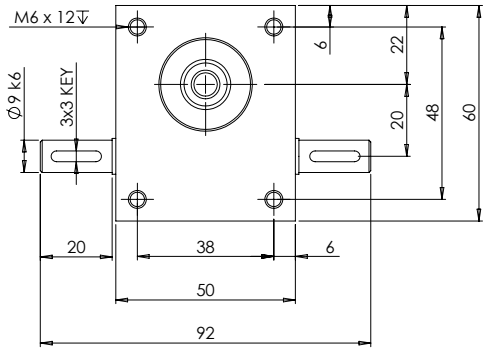


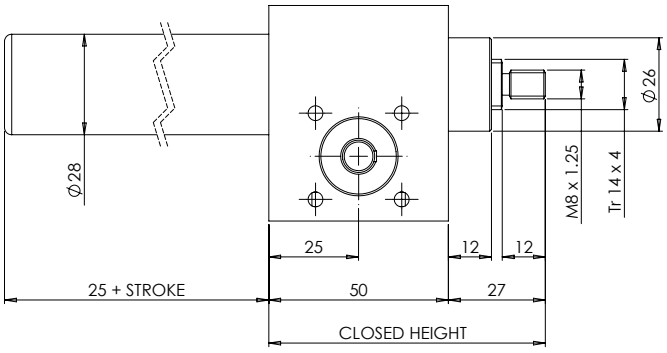
M0 – 250 kg Capacity
Type 1 Travelling Screw

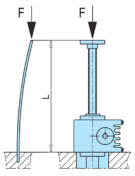
Model	562-004-010	562-016-010
Ratio	4 : 1	16 : 1
Screw Size (Tr)	14 x 4	14 x 4
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	1.5	1.5
Max. Capacity (kg)	250	250
Efficiency (%)	34	24
Material of Body	Aluminium	Aluminium
Body Weight (kg)	0.6	0.6
Max. Radial Load on Input (N)*	70	70
Standard Stroke (mm)**	100	100

* Applied at centre of input shaft (L/2). For more information, see page 7

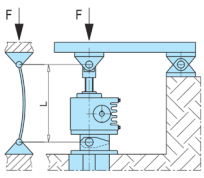
** For longer than standard stroke, see compressive load chart below



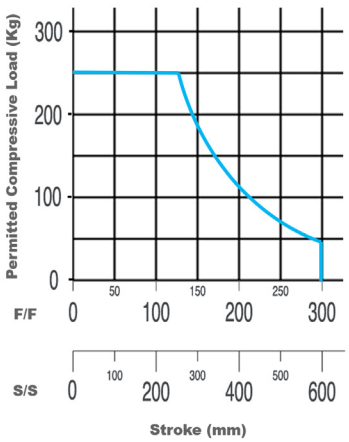




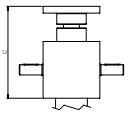
Fixed / Free
(F/F)



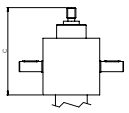
Supported / Supported
(S/S)



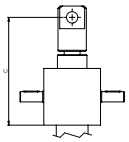
Closed Height
(with standard protrusion)



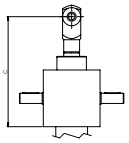
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	81
III	77
IV	95
GK	97

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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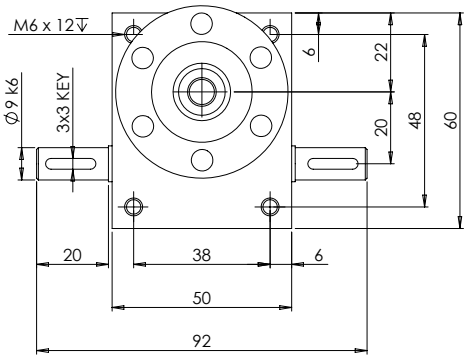
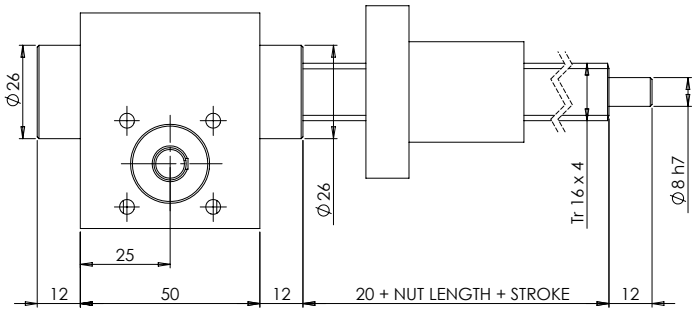
M0 – 250 kg Capacity
Type 2 Travelling Nut

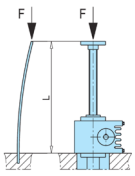
Model	563-004-010	563-016-010
Ratio	4 : 1	16 : 1
Screw Size (Tr)	16 x 4	16 x 4
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	1.5	1.5
Max. Capacity (kg)	250	250
Efficiency (%)	34	24
Material of Body	Aluminium	Aluminium
Body Weight (kg)	0.6	0.6
Max. Radial Load on Input (N)*	70	70
Standard Stroke (mm)**	100	100

* Applied at centre of input shaft (L/2). For more information, see page 7

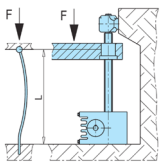
** For longer than standard stroke, see compressive load chart below



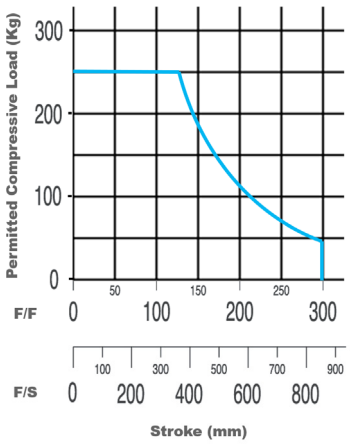


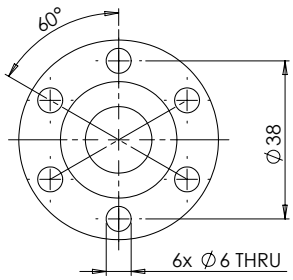


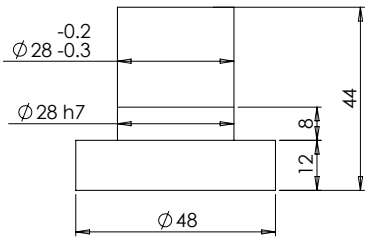
Fixed / Free
(F/F)



Fixed / Supported
(F/S)







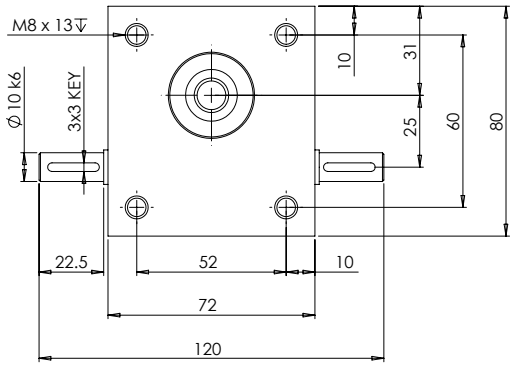
NOTE: For support bearings and end machining options available, please see page 31

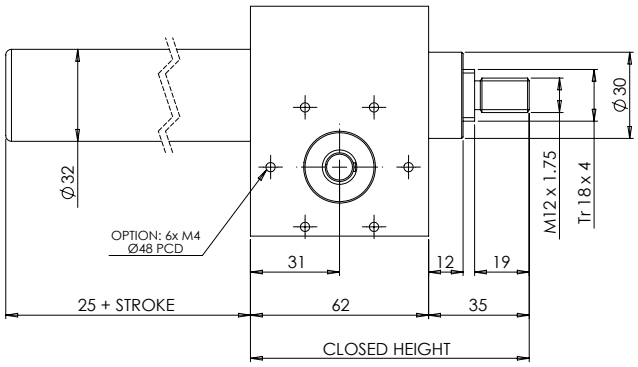
M1 – 500 kg Capacity
Type 1 Travelling Screw

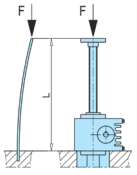
Model	562-104-012	562-116-012
Ratio	4 : 1	16 : 1
Screw Size (Tr)	18 x 4	18 x 4
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	3.4	3.4
Max. Capacity (kg)	500	500
Efficiency (%)	30	23
Material of Body	Aluminium	Aluminium
Body Weight (kg)	1.2	1.2
Max. Radial Load on Input (N)*	100	100
Standard Stroke (mm)**	120	120

* Applied at centre of input shaft (L/2). For more information, see page 7

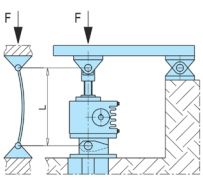
** For longer than standard stroke, see compressive load chart below



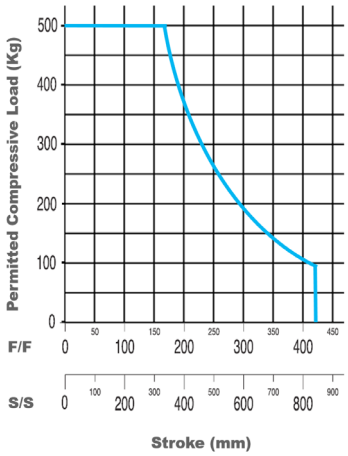




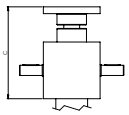
Fixed / Free
(F/F)



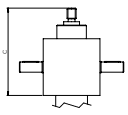
Supported / Supported
(S/S)



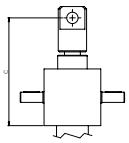
Closed Height
(with standard protrusion)



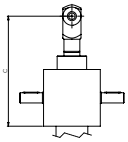
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	98
III	97
IV	118
GK	126

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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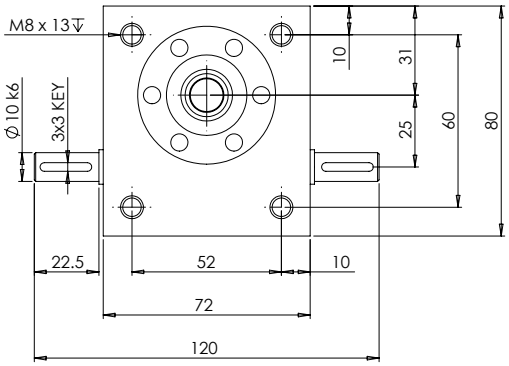
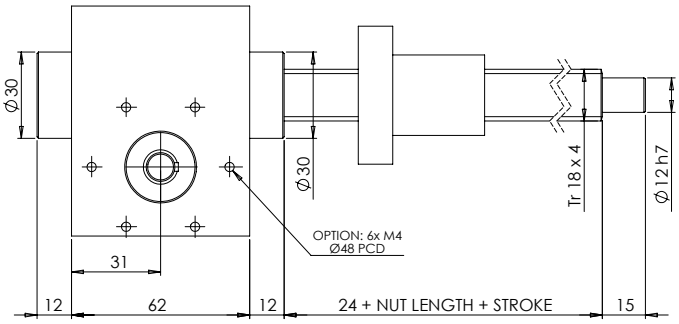
M1 – 500 kg Capacity
Type 2 Travelling Nut

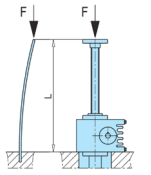
Model	563-104-012	563-116-012
Ratio	4 : 1	16 : 1
Screw Size (Tr)	18 x 4	18 x 4
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	3.4	3.4
Max. Capacity (kg)	500	500
Efficiency (%)	30	23
Material of Body	Aluminium	Aluminium
Body Weight (kg)	1.2	1.2
Max. Radial Load on Input (N)*	100	100
Standard Stroke (mm)**	120	120

* Applied at centre of input shaft (L/2). For more information, see page 7

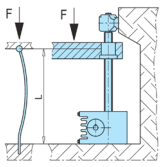
** For longer than standard stroke, see compressive load chart below



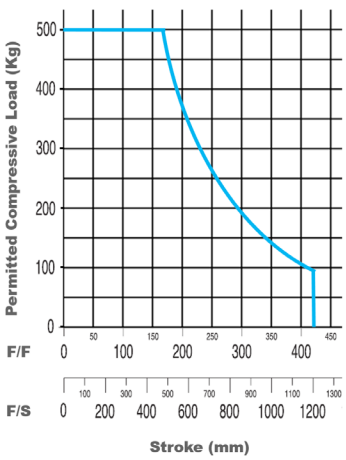


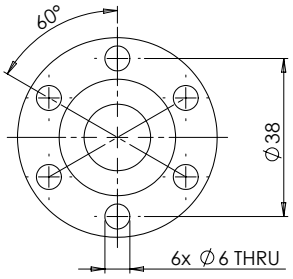


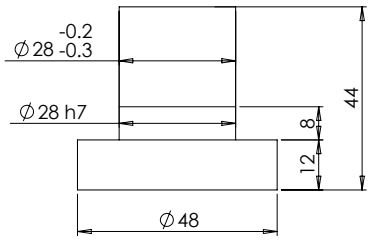
Fixed / Free
(F/F)



Fixed / Supported
(F/S)







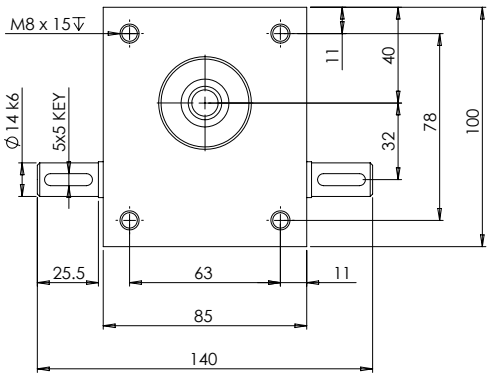
NOTE: For support bearings and end machining options available, please see page 31

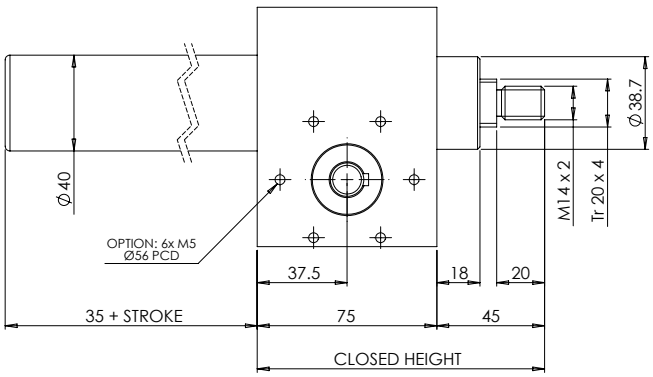
M2 – 1000 kg Capacity
Type 1 Travelling Screw

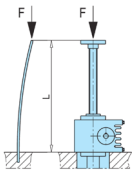
Model	562-204-015	562-216-015
Ratio	4 : 1	16 : 1
Screw Size (Tr)	20 x 4	20 x 4
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	7.1	7.1
Max. Capacity (kg)	1000	1000
Efficiency (%)	28	21
Material of Body	Aluminium	Aluminium
Body Weight (kg)	2.1	2.1
Max. Radial Load on Input (N)*	200	200
Standard Stroke (mm)**	150	150

* Applied at centre of input shaft (L/2). For more information, see page 7

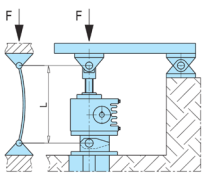
** For longer than standard stroke, see compressive load chart below



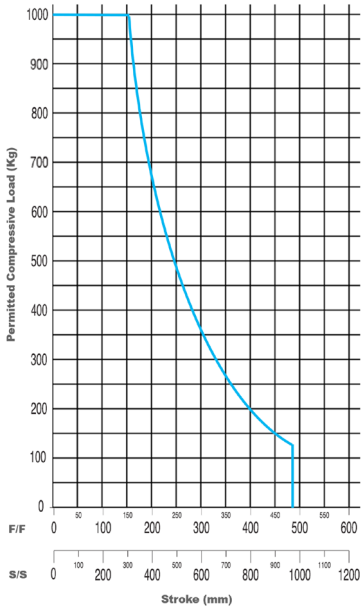




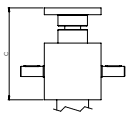
Fixed / Free
(F/F)



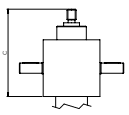
Supported / Supported
(S/S)



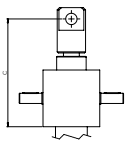
Closed Height
(with standard protrusion)



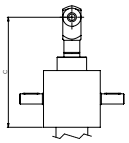
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	121
III	120
IV	145
GK	156

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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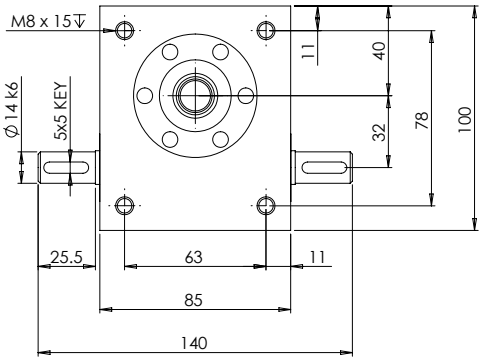
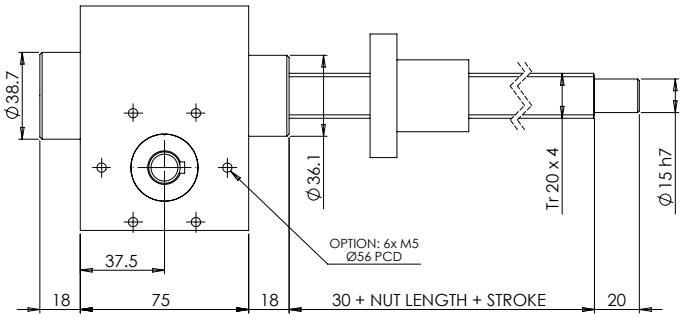
M2 – 1000 kg Capacity
Type 2 Travelling Nut

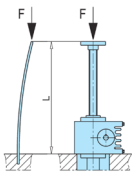
Model	563-204-015	563-216-015
Ratio	4 : 1	16 : 1
Screw Size (Tr)	20 x 4	20 x 4
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	7.1	7.1
Max. Capacity (kg)	1000	1000
Efficiency (%)	28	21
Material of Body	Aluminium	Aluminium
Body Weight (kg)	2.1	2.1
Max. Radial Load on Input (N)*	200	200
Standard Stroke (mm)**	150	150

* Applied at centre of input shaft (L/2). For more information, see page 7

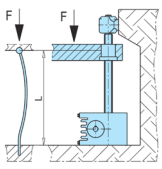
** For longer than standard stroke, see compressive load chart below



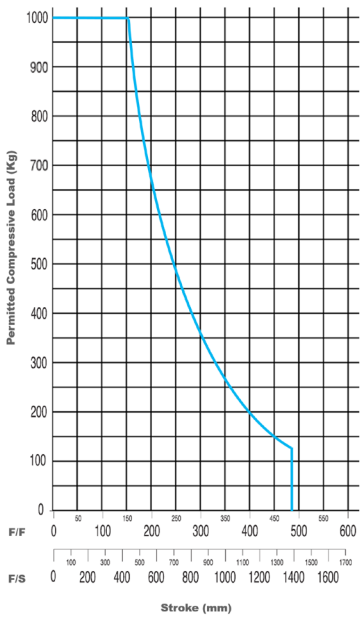


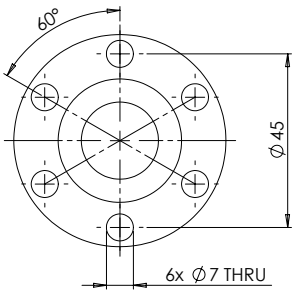


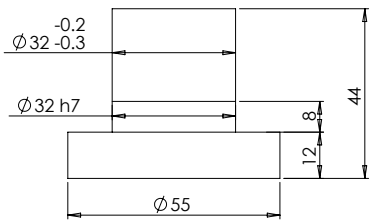
Fixed / Free
(F/F)



Fixed / Supported
(F/S)







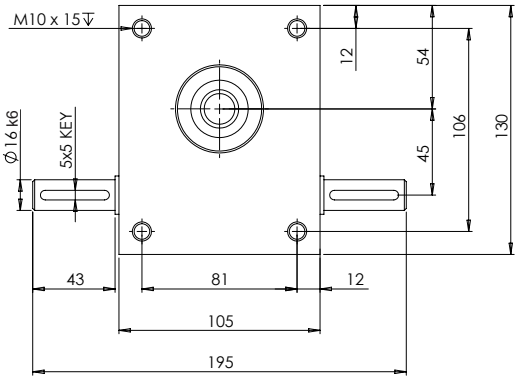
NOTE: For support bearings and end machining options available, please see page 31

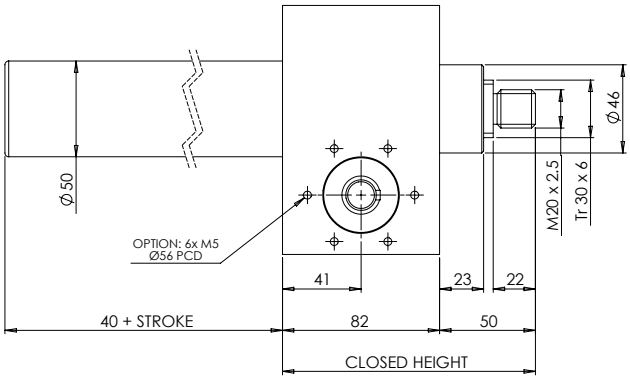
M3 – 2500 kg Capacity
Type 1 Travelling Screw

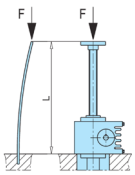
Model	562-306-020	562-324-020
Ratio	6 : 1	24 : 1
Screw Size (Tr)	30 x 6	30 x 6
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	18	18
Max. Capacity (kg)	2500	2500
Efficiency (%)	27	19
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	6.0	6.0
Max. Radial Load on Input (N)*	300	300
Standard Stroke (mm)**	200	200

* Applied at centre of input shaft (L/2). For more information, see page 7

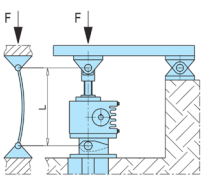
** For longer than standard stroke, see compressive load chart below



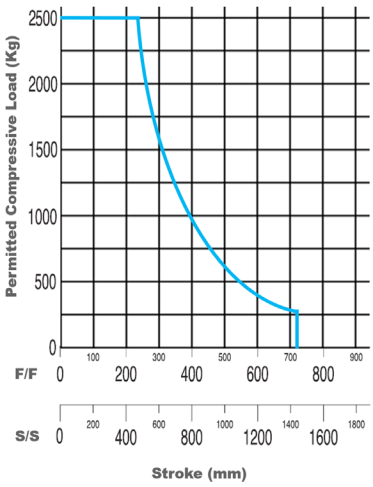




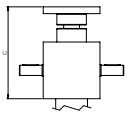
Fixed / Free
(F/F)



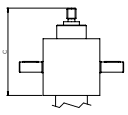
Supported / Supported
(S/S)



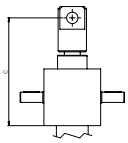
Closed Height
(with standard protrusion)



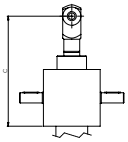
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	133
III	132
IV	163
GK	190

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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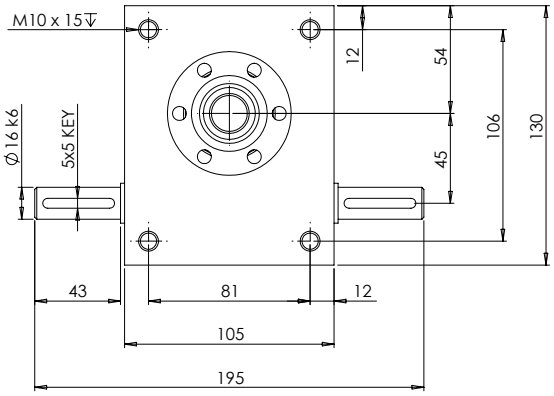
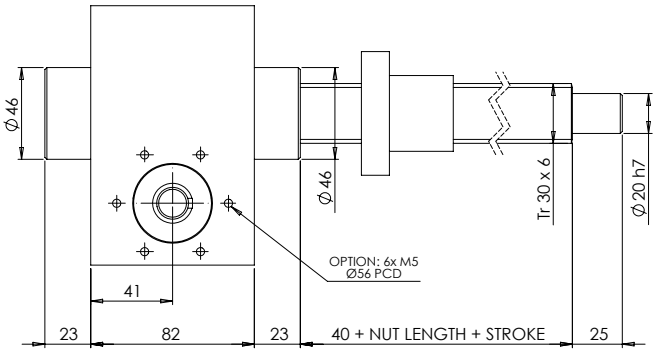
M3 – 2500 kg Capacity
Type 2 Travelling Nut

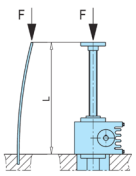
Model	563-306-020	563-324-020
Ratio	6 : 1	24 : 1
Screw Size (Tr)	30 x 6	30 x 6
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	18	18
Max. Capacity (kg)	2500	2500
Efficiency (%)	27	19
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	6.0	6.0
Max. Radial Load on Input (N)*	300	300
Standard Stroke (mm)**	200	200

* Applied at centre of input shaft (L/2). For more information, see page 7

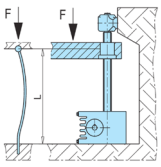
** For longer than standard stroke, see compressive load chart below



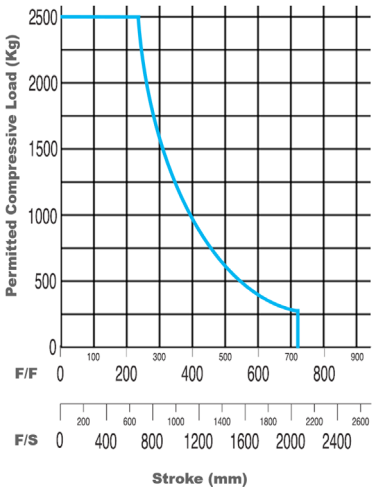


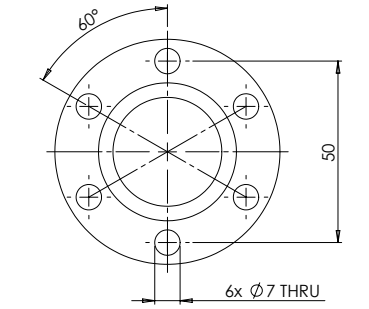


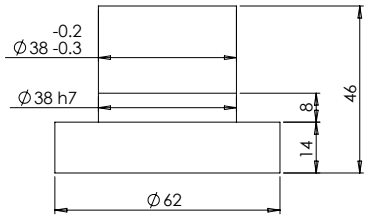
Fixed / Free
(F/F)



Fixed / Supported
(F/S)







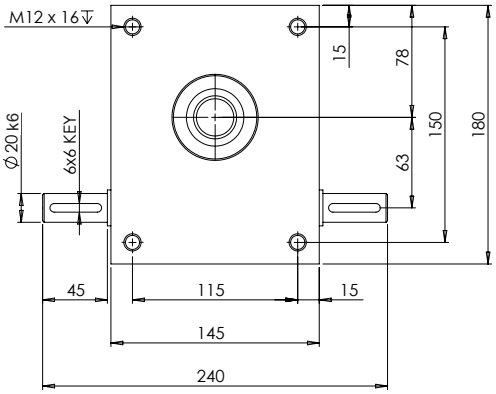
NOTE: For support bearings and end machining options available, please see page 31

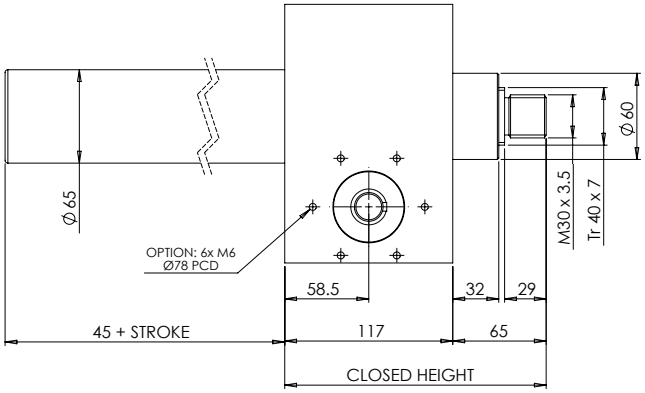
M4 – 5000 kg Capacity
Type 1 Travelling Screw

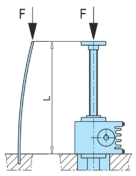
Model	562-407-025	562-428-025
Ratio	7 : 1	28 : 1
Screw Size (Tr)	40 x 7	40 x 7
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	38	38
Max. Capacity (kg)	5000	5000
Efficiency (%)	25	18
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	17.0	17.0
Max. Radial Load on Input (N)*	500	500
Standard Stroke (mm)**	250	250

* Applied at centre of input shaft (L/2). For more information, see page 7

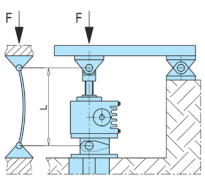
** For longer than standard stroke, see compressive load chart below



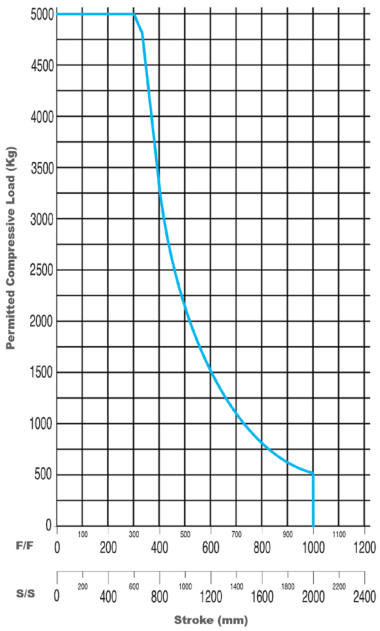




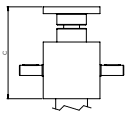
Fixed / Free
(F/F)



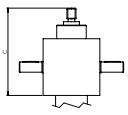
Supported / Supported
(S/S)



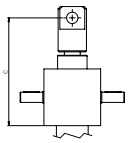
Closed Height
(with standard protrusion)



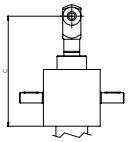
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	183
III	182
IV	223
GK	273

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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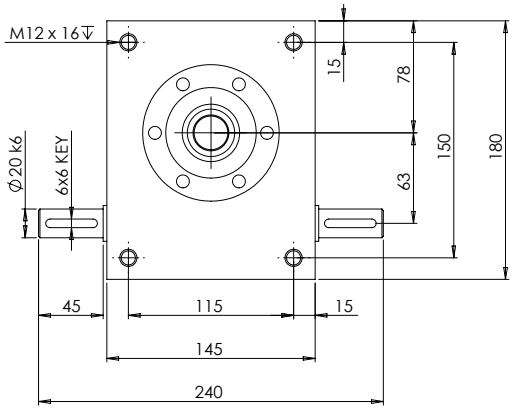
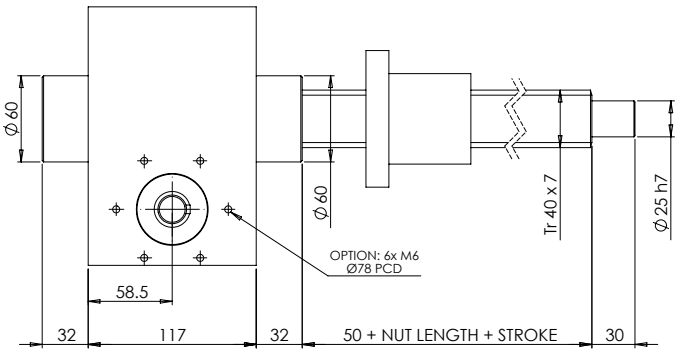
M4 – 5000 kg Capacity
Type 2 Travelling Nut

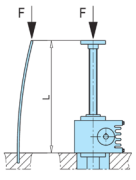
Model.	563-407-025	563-428-025
Ratio	7 : 1	28 : 1
Screw Size (Tr)	40 x 7	40 x 7
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	38	38
Max. Capacity (kg)	5000	5000
Efficiency (%)	25	18
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	17.0	17.0
Max. Radial Load on Input (N)*	500	500
Standard Stroke (mm)**	250	250

* Applied at centre of input shaft (L/2). For more information, see page 7

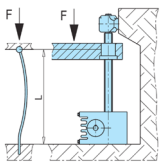
** For longer than standard stroke, see compressive load chart below



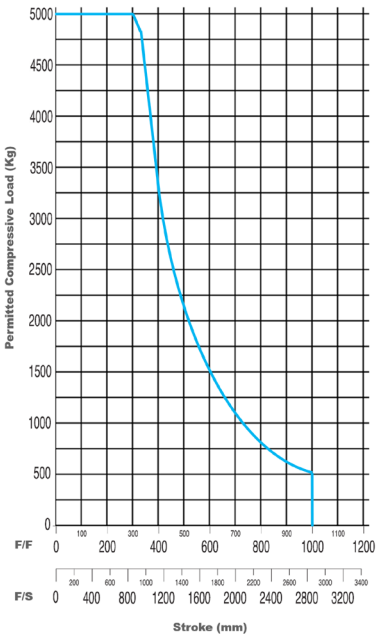


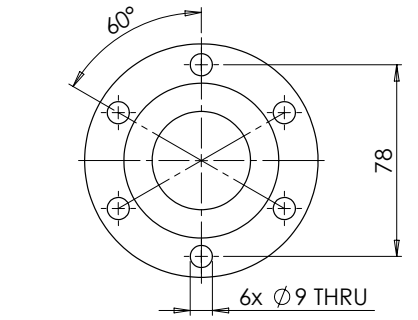


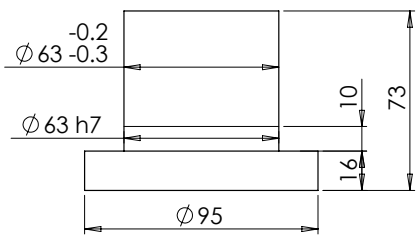
Fixed / Free
(F/F)



Fixed / Supported
(F/S)







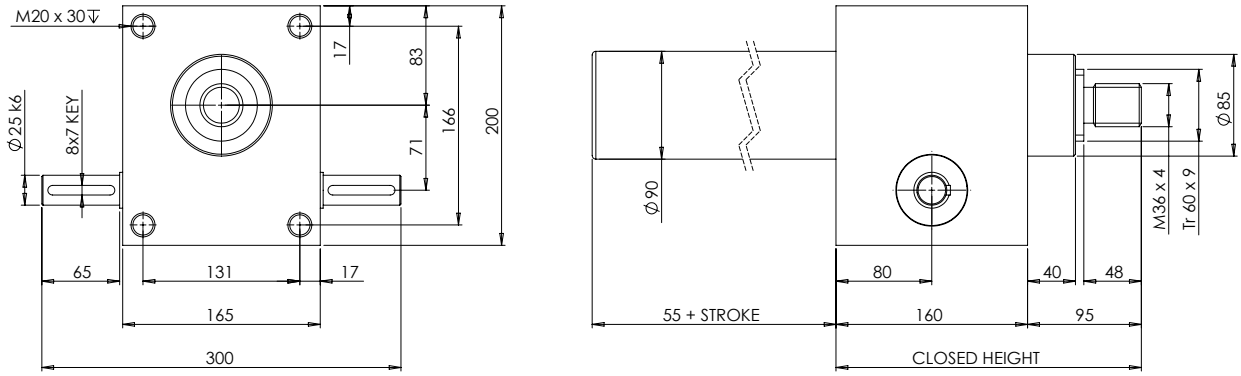
NOTE: For support bearings and end machining options available, please see page 31

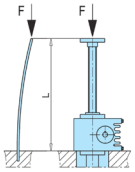
M5 – 15000 kg Capacity
Type 1 Travelling Screw

Model	562-509-040	562-536-040
Ratio	9 : 1	36 : 1
Screw Size (Tr)	60 x 9	60 x 9
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	93	93
Max. Capacity (kg)	15000	15000
Efficiency (%)	19	14
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	32.0	32.0
Max. Radial Load on Input (N)*	800	800
Standard Stroke (mm)**	400	400

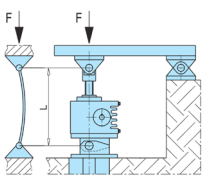
* Applied at centre of input shaft (L/2). For more information, see page 7

** For longer than standard stroke, see compressive load chart below

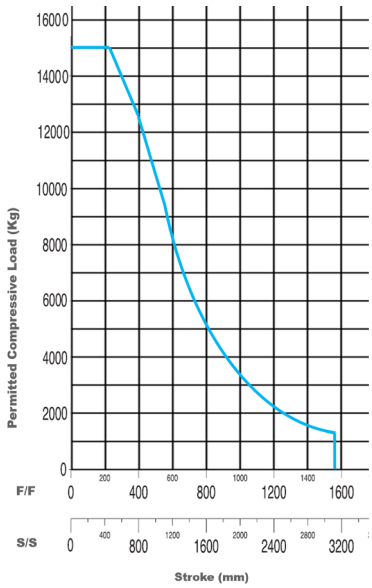




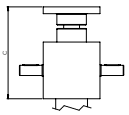
Fixed / Free
(F/F)



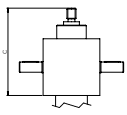
Supported / Supported
(S/S)



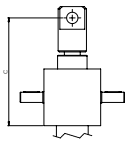
Closed Height
(with standard protrusion)



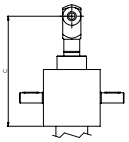
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	257
III	255
IV	304
GK	351

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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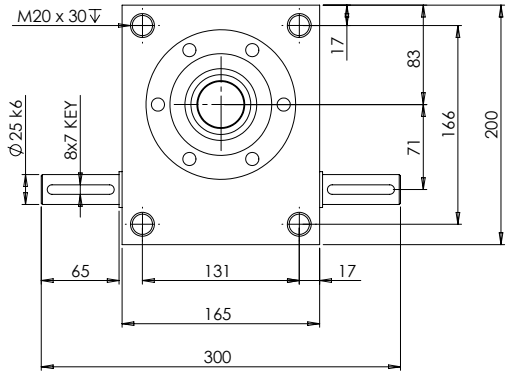
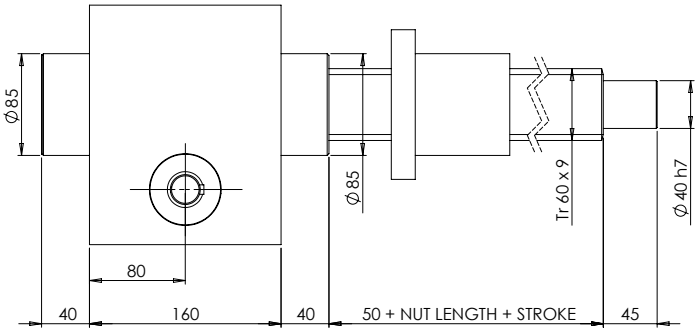
M5 – 15000 kg Capacity
Type 2 Travelling Nut

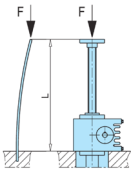
Model	563-509-040	563-536-040
Ratio	9 : 1	36 : 1
Screw Size (Tr)	60 x 9	60 x 9
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	93	93
Max. Capacity (kg)	15000	15000
Efficiency (%)	19	14
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	32.0	32.0
Max. Radial Load on Input (N)*	800	800
Standard Stroke (mm)**	400	400

* Applied at centre of input shaft (L/2). For more information, see page 7

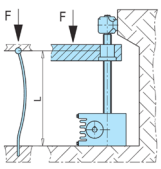
** For longer than standard stroke, see compressive load chart below



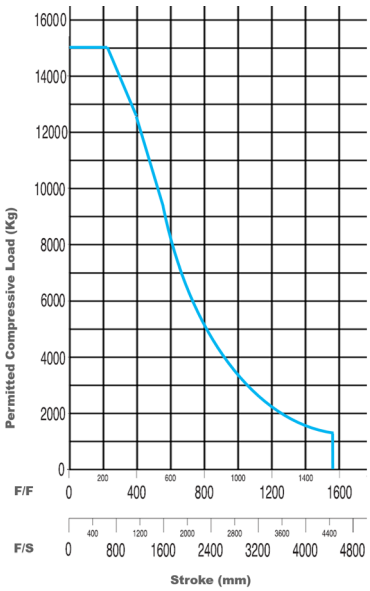


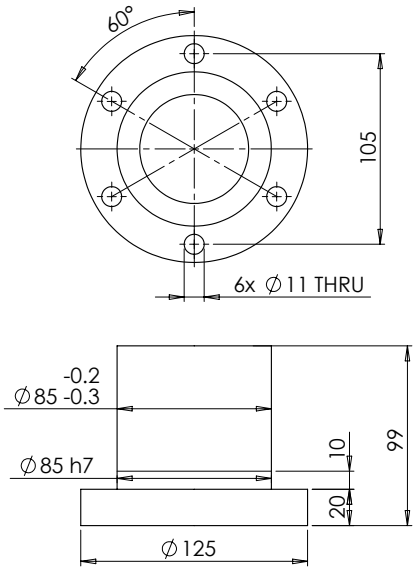


Fixed / Free (F/F)



Fixed / Supported (F/S)





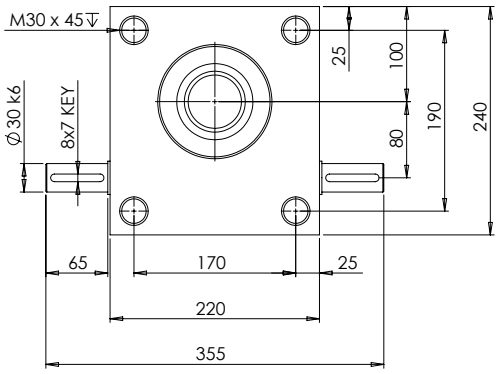
NOTE: For support bearings and end machining options available, please see page 31

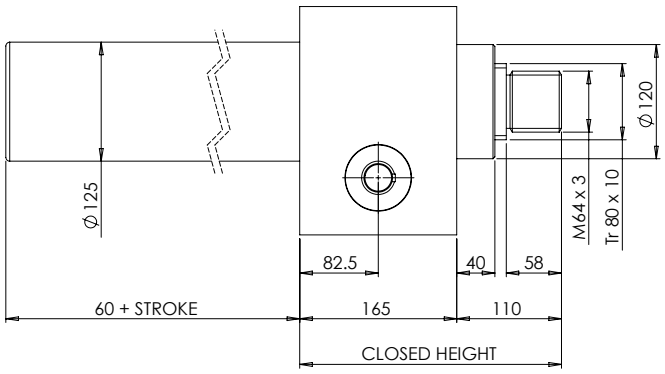
M6 – 25000 kg Capacity
Type 1 Travelling Screw

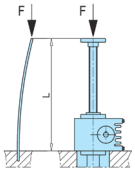
Model	562-610-060	562-640-060
Ratio	10 : 1	40 : 1
Screw Size (Tr)	80 x 10	80 x 10
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	240	240
Max. Capacity (kg)	25000	25000
Efficiency (%)	19	14
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	57.0	57.0
Max. Radial Load on Input (N)*	1300	1300
Standard Stroke (mm)**	600	600

* Applied at centre of input shaft (L/2). For more information, see page 7

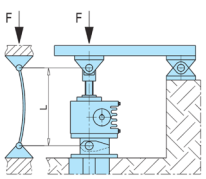
** For longer than standard stroke, see compressive load chart below



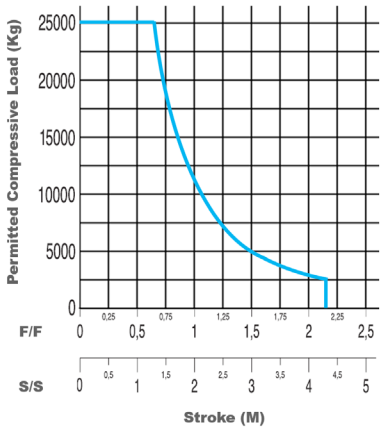




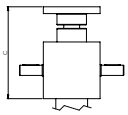
Fixed / Free
(F/F)



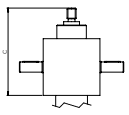
Supported / Supported
(S/S)



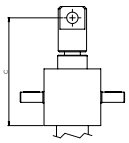
Closed Height
(with standard protrusion)



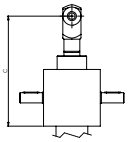
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	277
III	275
IV	322
GK	N/A

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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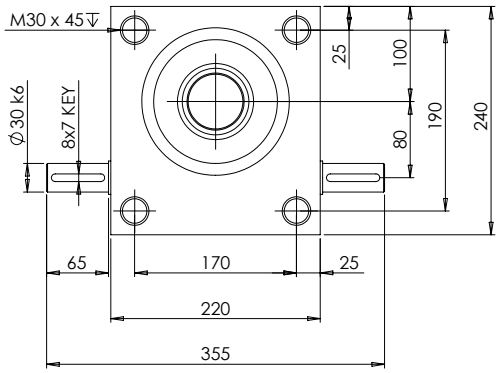
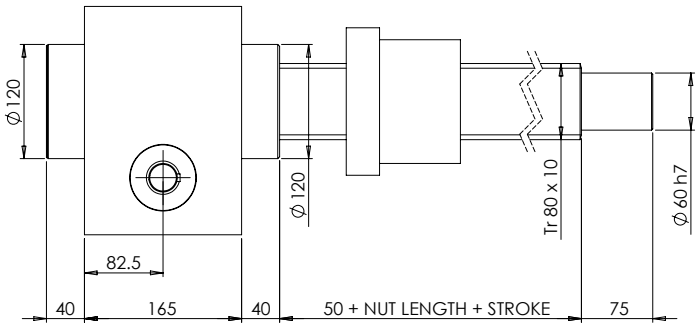
M6 – 25000 kg Capacity
Type 2 Travelling Nut

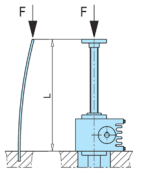
Model	563-610-060	563-640-060
Ratio	10 : 1	40 : 1
Screw Size (Tr)	80 x 10	80 x 10
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	240	240
Max. Capacity (kg)	25000	25000
Efficiency (%)	19	14
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	57.0	57.0
Max. Radial Load on Input (N)*	1300	1300
Standard Stroke (mm)**	600	600

* Applied at centre of input shaft (L/2). For more information, see page 7

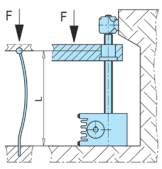
** For longer than standard stroke, see compressive load chart below



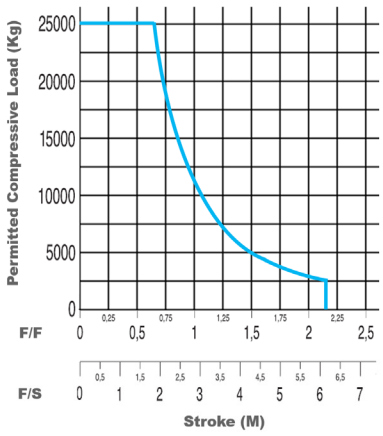


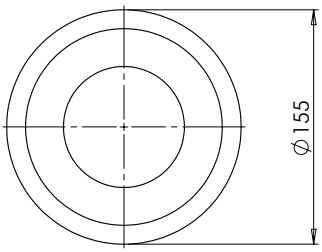


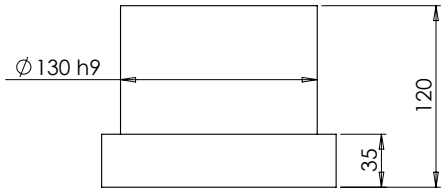
Fixed / Free
(F/F)



Fixed / Supported
(F/S)







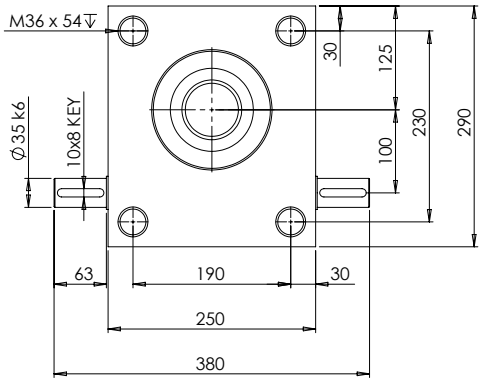
NOTE: For support bearings and end machining options available, please see page 31

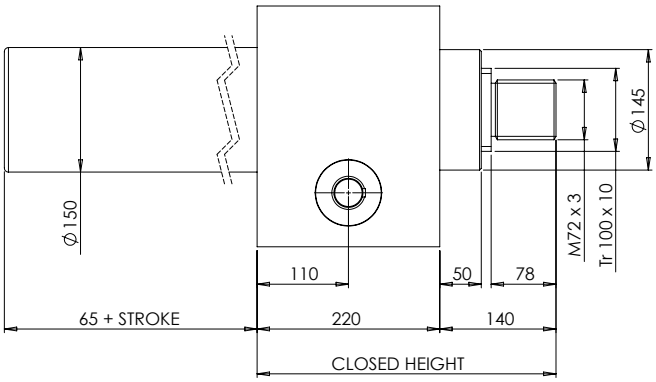
M7 – 35000 kg Capacity
Type 1 Travelling Screw

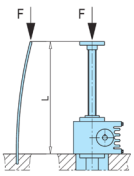
Model	562-710-080	562-740-080
Ratio	10 : 1	40 : 1
Screw Size (Tr)	100 x 10	100 x 10
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	340	340
Max. Capacity (kg)	35000	35000
Efficiency (%)	15	11
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	85.0	85.0
Max. Radial Load on Input (N)*	2100	2100
Standard Stroke (mm)**	800	800

* Applied at centre of input shaft (L/2). For more information, see page 7

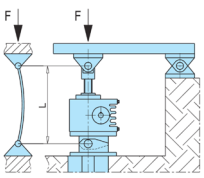
** For longer than standard stroke, see compressive load chart below



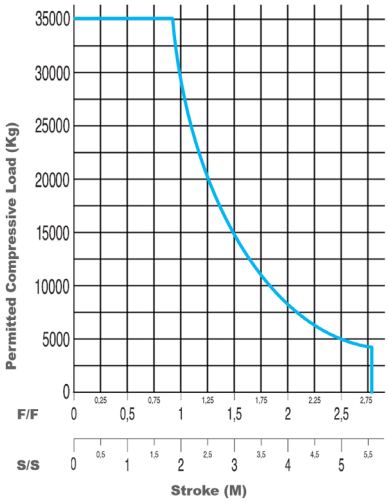




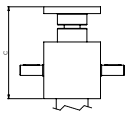
Fixed / Free
(F/F)



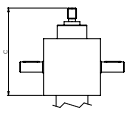
Supported / Supported
(S/S)



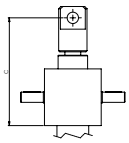
Closed Height
(with standard protrusion)



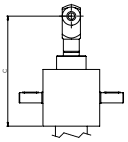
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	362
III	360
IV	417
GK	N/A

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

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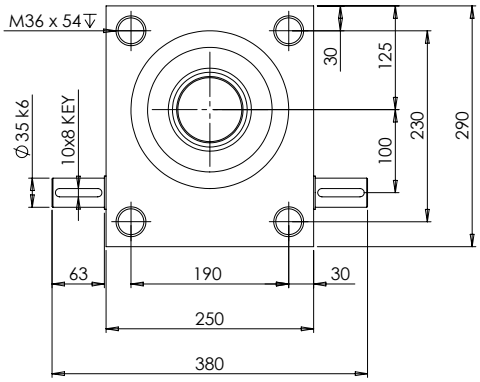
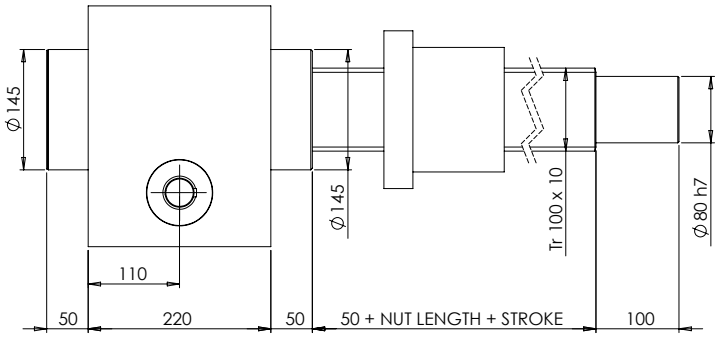
M7 – 35000 kg Capacity
Type 2 Travelling Nut

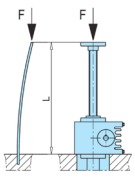
Model	563-710-080	563-740-080
Ratio	10 : 1	40 : 1
Screw Size (Tr)	100 x 10	100 x 10
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	340	340
Max. Capacity (kg)	35000	35000
Efficiency (%)	15	11
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	85.0	85.0
Max. Radial Load on Input (N)*	2100	2100
Standard Stroke (mm)**	800	800

* Applied at centre of input shaft (L/2). For more information, see page 7

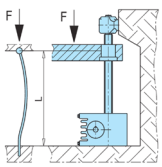
** For longer than standard stroke, see compressive load chart below



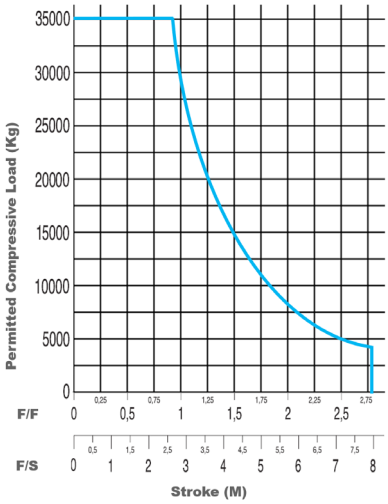


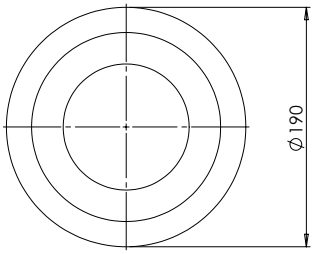


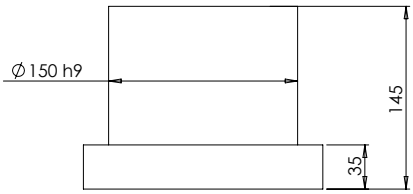
Fixed / Free
(F/F)



Fixed / Supported
(F/S)







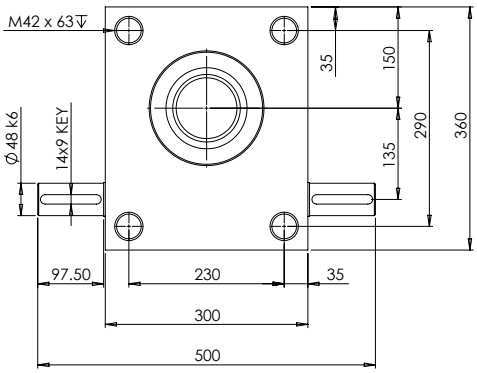
NOTE: For support bearings and end machining options available, please see page 31

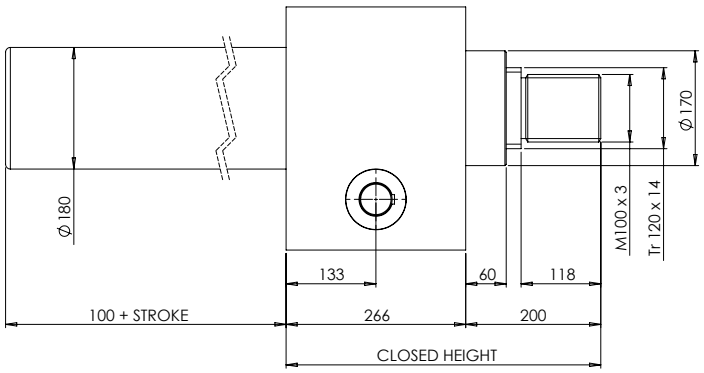
M8 – 50000 kg Capacity
Type 1 Travelling Screw

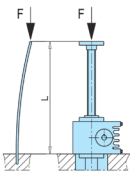
Model	562-814-100	562-856-100
Ratio	14 : 1	56 : 1
Screw Size (Tr)	120 x 14	120 x 14
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	570	570
Max. Capacity (kg)	50000	50000
Efficiency (%)	15	11
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	160.0	160.0
Max. Radial Load on Input (N)*	3100	3100
Standard Stroke (mm)**	1000	1000

* Applied at centre of input shaft (L/2). For more information, see page 7

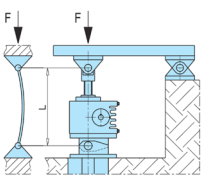
** For longer than standard stroke, see compressive load chart below



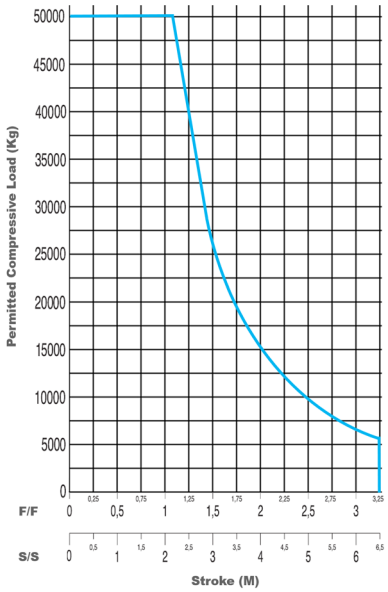




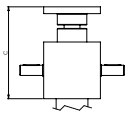
Fixed / Free
(F/F)



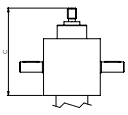
Supported / Supported
(S/S)



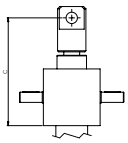
Closed Height
(with standard protrusion)



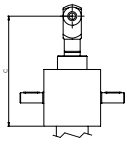
Head Type II
Top Plate



Head Type III
Threaded



Head Type IV
Clevis



Head Type GK
Fork

Head Type	Dim C (mm)
II	468
III	466
IV	548
GK	N/A

NOTE: If head type is unspecified, threaded type III will be supplied without accessory as default
Please see page 30 for more information

TEL: 01827 288122
sales@wmh-trans.co.uk
FAX: 01827 253390
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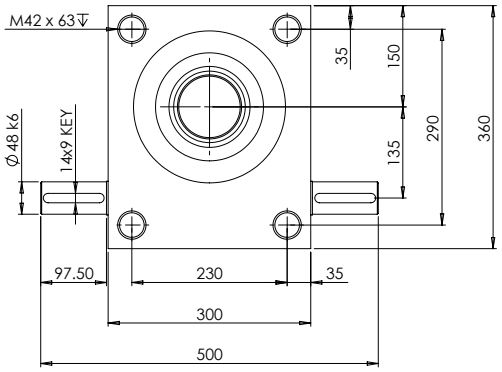
WMH Transmissions Limited

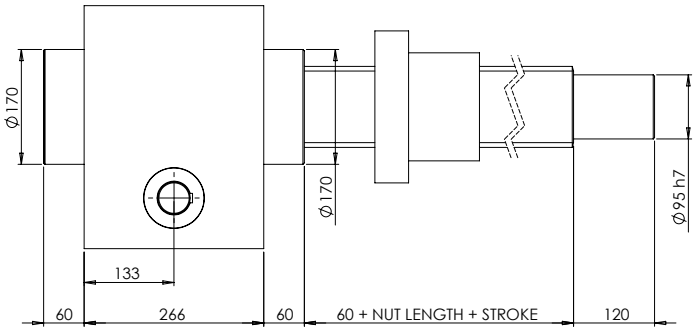
M8 – 50000 kg Capacity
Type 2 Travelling Nut

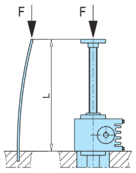
Model	563-814-100	563-856-100
Ratio	14 : 1	56 : 1
Screw Size (Tr)	120 x 14	120 x 14
Travel per Input rev (mm)	1	0.25
Max. Travel Speed (mm/s)	25	6.25
Max. Input Speed (rpm)	1500	1500
Max. Input Torque (Nm)	570	570
Max. Capacity (kg)	50000	50000
Efficiency (%)	15	11
Material of Body	Cast Iron	Cast Iron
Body Weight (kg)	160.0	160.0
Max. Radial Load on Input (N)*	3100	3100
Standard Stroke (mm)**	1000	1000

* Applied at centre of input shaft (L/2). For more information, see page 7

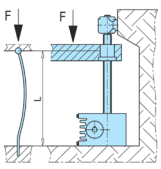
** For longer than standard stroke, see compressive load chart below



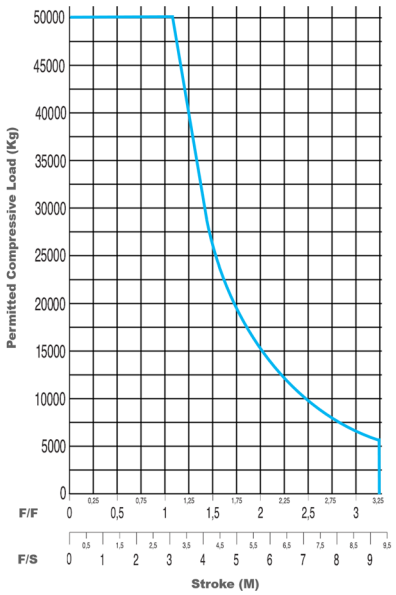


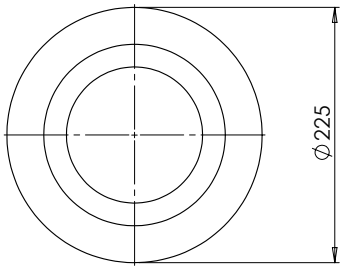


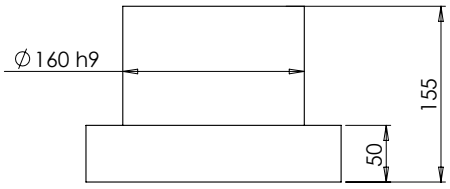
Fixed / Free
(F/F)



Fixed / Supported
(F/S)





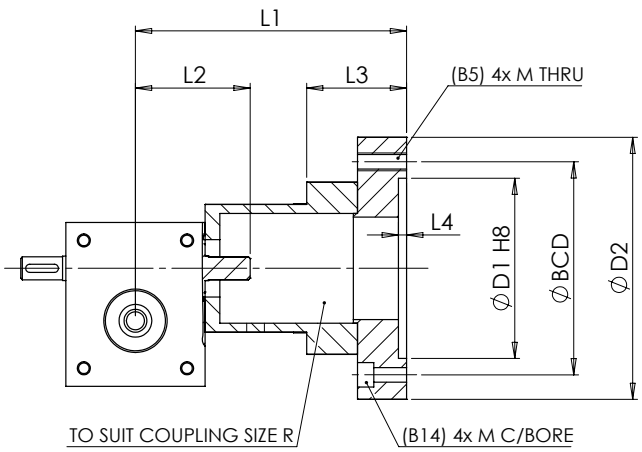


NOTE: For support bearings and end machining options available, please see page 31

Motor Flanges
For Standard IEC motors

WMH screw jacks have the capacity for direct mounting of an IEC motor via the use of an aluminium adapter flange & bell housing containing a flexible rubber element coupling to connect the motor output shaft to the jack input shaft.

WMH stock a range of adapters to suit most standard B5 (square flange type motor with through holes) and B14 (plain round with tapped hole interface) type industrial standard motors but special adapters can be made to suit specific applications using non-standard motors upon request



Size	Frame	D2	BCD	D1	B5 M	B14 M	L1	L2	L3	L4	R	Part Number
M1	63	90	75	60	-	M5	96.0	60	25	4	R14	ZSB-MG-M1-090-063
M1	63	120	100	80	-	M6	96.0	60	25	4	R14	ZSB-MG-M1-120-063
M1	71	105	85	70	-	M6	102.0	60	31	4	R14	ZSB-MG-M1-105-071
M1	71	140	115	95	-	M8	102.0	60	31	4	R14	ZSB-MG-M1-140-071
M2	63	120	100	80	-	M6	106.5	70	21	4	R14	ZSB-MG-M2-120-063
M2	71	105	85	70	-	M6	113.5	70	28	4	R14	ZSB-MG-M2-105-071
M2	71	140	115	95	-	M8	113.5	70	28	4	R14	ZSB-MG-M2-140-071
M2	63	120	100	80	-	M6	123.5	70	38	4	R19	ZSB-MG-M2-120-063
M2	71	105	85	70	-	M6	123.5	70	38	4	R19	ZSB-MG-M2-105-071
M2	71	140	115	95	-	M8	123.5	70	38	4	R19	ZSB-MG-M2-140-071
M2	80	120	100	80	-	M6	133.5	70	48	5	R19	ZSB-MG-M2-120-080
M2	80	160	130	110	-	M8	133.5	70	48	5	R19	ZSB-MG-M2-160-080
M3	63	120	100	80	-	M6	142.5	97.5	28	4	R19/24	ZSB-MG-M3-120-063
M3	71	105	85	70	-	M6	143.5	97.5	29	4	R19/24	ZSB-MG-M3-105-071
M3	71	140	115	95	-	M8	143.5	97.5	29	4	R19/24	ZSB-MG-M3-140-071
M3	80	120	100	80	-	M6	155.5	97.5	41	5	R19/24	ZSB-MG-M3-120-080
M3	80	160	130	110	-	M8	155.5	97.5	41	5	R19/24	ZSB-MG-M3-160-080
M3	90	140	115	95	-	M8	165.5	97.5	51	5	R24/28	ZSB-MG-M3-140-090
M3	90	160	130	110	-	M8	165.5	97.5	51	5	R24/28	ZSB-MG-M3-160-090
M3	90	200	165	130	-	M10	165.5	97.5	51	5	R24/28	ZSB-MG-M3-200-090
M3	100/112	160	130	110	-	M8	175.5	97.5	61	5	R24/28	ZSB-MG-M3-160-100
M3	100/112	200	165	130	-	M10	175.5	97.5	61	5	R24/28	ZSB-MG-M3-200-100
M4	71	120	85	70	-	M6	166.0	120	29.5	4	R19/24	ZSB-MG-M4-120-071
M4	71	140	115	95	-	M8	166.0	120	29.5	4	R19/24	ZSB-MG-M4-140-071
M4	80	120	100	80	-	M6	176.0	120	39.5	5	R19/24	ZSB-MG-M4-120-080
M4	80	160	130	100	-	M8	176.0	120	39.5	5	R19/24	ZSB-MG-M4-160-080
M4	80	160	130	110	M8	M8	178.5	120	35	5	R24/28	ZSB-MG-M4-160-080*
M4	80	160	130	110	M8	M8	183.5	120	40	5	R28/38	ZSB-MG-M4-160-080*
M4	80	200	165	130	M10	-	178.5	120	35	5	R24/28	ZSB-MG-M4-200-080
M4	80	200	165	130	M10	-	183.5	120	40	5	R28/38	ZSB-MG-M4-200-080*
M4	90	160	130	110	M8	M8	188.0	120	44.5	5	R24/28	ZSB-MG-M4-160-090
M4	90	160	130	110	M8	M8	193.0	120	49.5	5	R28/38	ZSB-MG-M4-160-090*
M4	90	200	165	130	M10	-	188.0	120	44.5	5	R24/28	ZSB-MG-M4-200-090
M4	90	200	165	130	M10	-	193.0	120	49.5	5	R28/38	ZSB-MG-M4-200-090*
M4	100/112	160	130	110	M8	M8	198.0	120	54.5	6	R24/28	ZSB-MG-M4-160-100
M4	100/112	160	130	110	M8	M8	203.0	120	59.5	6	R28/38	ZSB-MG-M4-160-100*
M4	100/112	200	165	130	M10	M10	198.0	120	54.5	6	R24/28	ZSB-MG-M4-200-100
M4	100/112	200	165	130	M10	M10	203.0	120	59.5	6	R28/38	ZSB-MG-M4-200-100*

***PLEASE SPECIFY COUPLING SIZE AND MOTOR INTERFACE TYPE (B5 OR B14) WHERE APPLICABLE WHEN ORDERING**

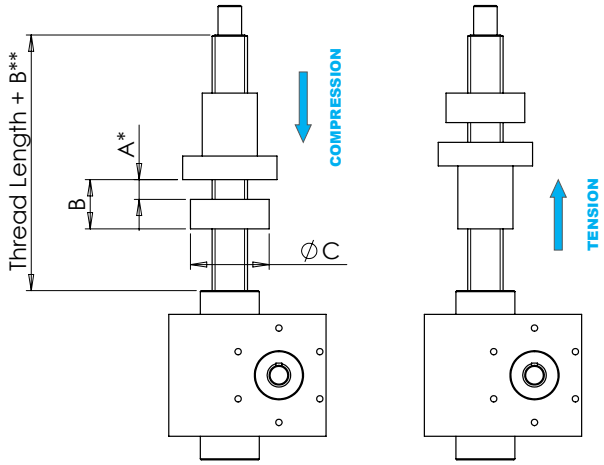
TEL: 01827 288122
sales@wmh-trans.co.uk
FAX: 01827 253390
www.wmh-trans.co.uk
WMH Transmissions Limited

Safety Nuts
For Type 2 Jacks

WMH travelling nut (type 2) screw jacks can be fitted with an optional safety nut to prevent loads falling if the main nut has worn excessively or brakes.

The safety nut can also be used to precisely monitor wear of the main nut as the clearance between the two reduces with wear over time. It is important that the safety nut is installed behind the main nut in the direction of the load as illustrated to ensure correct operation.

WMH safety nuts are available in short (standard) or long formats.



Size	A *	B **	C	Part Number
~ SHORT TYPE ~				
M0	ON REQUEST			563-000-002
M1				563-100-002
M2	5	25	45	563-200-002
M3	5	35	50	563-300-002
M4	5	40	70	563-400-002
M5	5	60	90	563-500-002
M6	10	80	130	563-600-002
M7	10	80	150	563-700-002
M8	ON REQUEST			563-800-002
~ LONG TYPE ~				
M0	ON REQUEST			563-000-003
M1				563-100-003
M2	5	45	45	563-200-003
M3	5	55	50	563-300-003
M4	5	70	70	563-400-003
M5	5	85	90	563-500-003
M6	10	135	130	563-600-003
M7	10	160	150	563-700-003
M8	ON REQUEST			563-800-003

* As new, will decrease with wear over time and be replaced when approaching zero

** Length B should be considered when calculating total thread length

WMH worm gear screw jacks are designed according to current regulations for use on theatre stages (VBG 16.4.5), lifting platforms (VBG 14) or jacking systems that might affect personal safety.

WMH worm gear screw jacks include such items as anti-drop systems (self locking screw threads and / or mechanical safety brakes as part of the drive system). The function of the synchronising device is guaranteed, when required, by additional components.

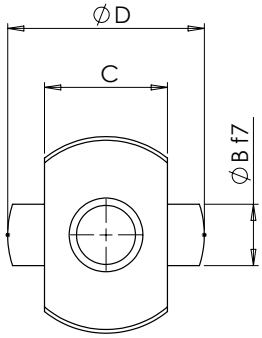
PLEASE SPECIFY SAFETY NUT FORM WHEN ORDERING AS SHORT TYPE IS SUPPLIED AS STANDARD
LONG TYPE RECOMMENDED FOR VBG 16.4.5 or VBG 14 SPECIFIC APPLICATIONS

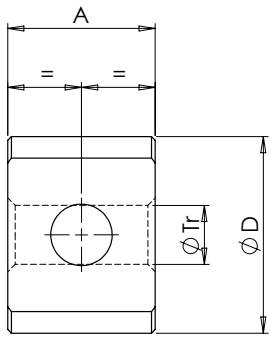
Trunnion Nuts & Plates
For Type 1 & 2 Jacks

WMH screw jacks can be used in applications requiring swivelling and tipping movements via the use of trunnion plates in combination with clevis heads and bronze trunnion type nuts in place of the standard flanged type nuts.

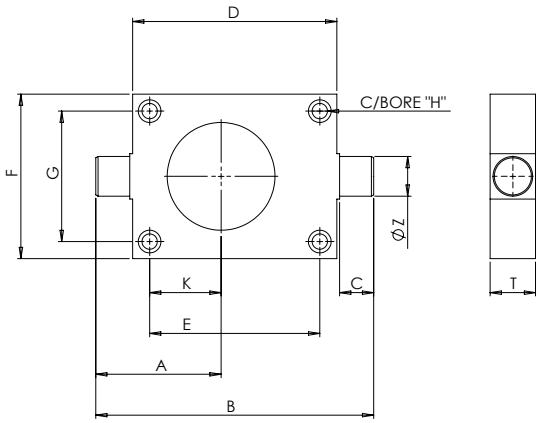
Any bending moments subject to the jack assembly should be minimised as much as possible by means of low-friction articulation points.

Size	A	B	C	D	Tr
M0	ON REQUEST				
M1	45	14	35	50	18x4
M2	50	18	40	60	20x4
M3	60	25	50	80	30x6
M4	70	35	62	95	40x7
M5	90	50	80	130	60x9
M6	145	75	120	190	80x10
M7	ON REQUEST				
M8					

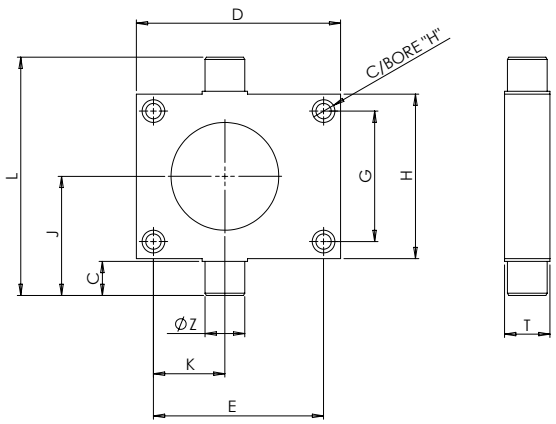




STANDARD



TRANSVERSE



Size	A	B	C	D	E	F	G	H	J	K	L	T	Z	Part Number
M0	34.5	85	10	60	48	50	35	M6	37.5	16	75	15	10	562-000-004*
M1	48.5	115	15	80	60	72	52	M8	53.5	21	107	20	15	562-100-004*
M2	62.5	145	20	100	78	85	63	M8	65.0	29	130	25	20	562-200-004*
M3	76.5	175	20	130	106	105	81	M10	75	42	150	30	25	562-300-004*
M4	110.5	245	30	180	150	145	115	M12	105	63	210	40	35	562-400-004*
M5	120.5	275	35	200	166	165	131	M20	120	66	240	50	45	562-500-004*
M6	ON REQUEST													562-600-004*
M7														562-700-004*
M8														562-800-004*

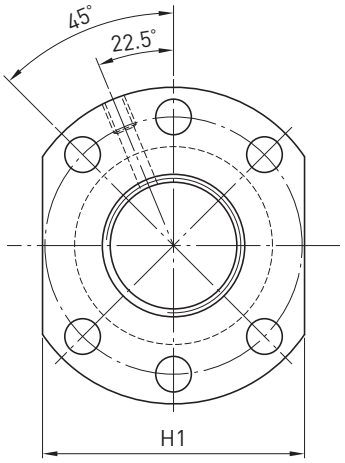
***PLEASE SPECIFY STANDARD OR TRANSVERSE TYPE TRUNNION PLATE ELSE A STANDARD TYPE PLATE WILL BE SUPPLIED IF NOT SPECIFIED WHEN ORDERING**

TEL: 01827 288122
sales@wmh-trans.co.uk
FAX: 01827 253390
www.wmh-trans.co.uk
WMH Transmissions Limited

Ballscrew Nut Options
To Replace Leadscrews

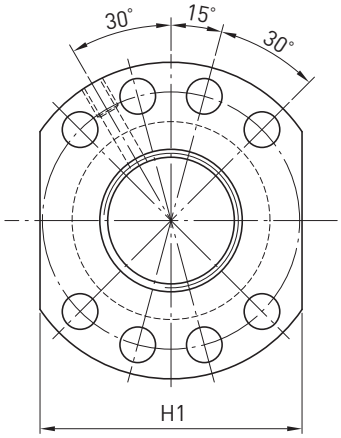
UP TO 30mmØ

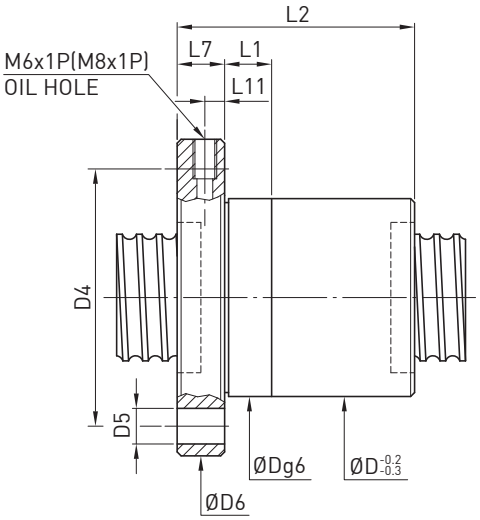
TYPE 1



40mmØ & Above

TYPE 2





Type	Jack Size	Nom Ø	Lead mm	Ball Ø	Capacity		D	D4	D5	D6	H1	L1	L2	L7	M OIL HOLE
					Dyn KgF	Stat KgF									
R16-1T4-FSI	M0	16	1	0.8	123	411	22	31	5.5	40	26	10	23	6	-
R16-2.5T4-FSI	M0	16	2.5	2	409	873	25	35	5.5	44	29	10	44	10	M6 x 1
R16-5T3-FSI	M0	16	5	3.175	664	1195	28	38	5.5	48	40	10	40	10	M6 x 1
R16-10T3-FSI	M0	16	10	3.175	621	1101	28	38	5.5	48	40	10	60	10	M6 x 1
R20-5T4-FSI	M1	20	5	3.175	938	1993	36	47	6.6	58	44	10	52	10	M6 x 1
R25-5T4-FSI	M2	25	5	3.175	1127	2776	40	51	6.6	62	48	12	52	10	M6 x 1
R25-10T3-FSI	M2	25	10	4.763	1430	2913	40	51	6.6	62	48	16	65	10	M6 x 1
R32-5T6-FSI	M3	32	5	3.175	1829	5544	50	65	9	80	62	10	66	12	M6 x 1
R32-10T4-FSI	M3	32	10	6.350	2899	6404	50	65	9	80	62	16	85	12	M6 x 1
R40-5T6-FSI	M4	40	5	3.175	2003	6931	63	78	9	93	70	10	66	14	M8 x 1
R40-10T4-FSI	M4	40	10	6.350	3396	8488	63	78	9	93	70	16	87	14	M8 x 1
R40-20T2-FSI	M4	40	20	6.350	1870	4244	63	78	9	93	70	20	88	14	M8 x 1
R50-5T6-FSI	M4	50	5	3.175	2213	8909	75	93	11	110	85	10	70	16	M8 x 1
R50-10T6-FSI	M4	50	10	6.350	5526	16668	75	93	11	110	85	16	112	16	M8 x 1
R50-20T4-FSI	M4	50	20	9.525	8306	21608	78	93	11	110	85	16	150	16	M8 x 1
R63-10T6-FSI	M5	63	10	6.350	6192	21409	90	108	11	125	95	16	114	18	M8 x 1
R63-20T5-FSI	M5	63	20	9.525	11536	35194	90	108	11	125	95	16	160	20	M8 x 1
R80-10T6-FSI	M6	80	10	6.350	7093	28508	105	125	13.5	145	110	20	114	20	M8 x 1
R80-20T5-FSI	M6	80	20	9.525	13449	47447	125	145	13.5	165	130	25	175	25	M8 x 1

NOTE: R16x1 and R16x2.5 nuts have only 4 off mounting holes @ 30° from centre line

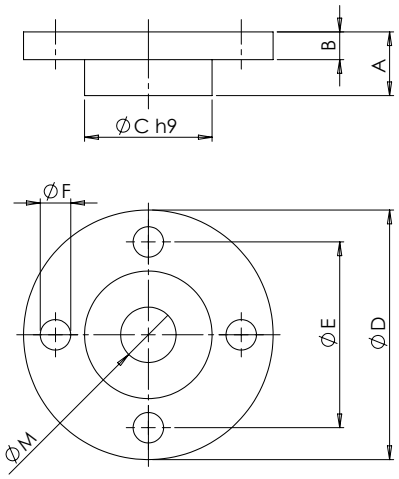
WMH can offer the option of replacing the trapezoidal leadscrew and bronze nut found in standard cubic body jacks with higher efficiency precision ballscrews. This is particularly suited to applications needing nut speeds of over 25 mm/s and / or higher positional accuracy and repeatability. Ballscrews can be fitted to almost any size cubic jack with travelling nut configuration and have the added benefit of being able to be preloaded to backlash free if needed.

Each ballscrew jack is tailored to the application so please contact our sales team with you requirements and we will be happy to help.

THIS IS NOT THE FULL RANGE OF BALLSCREWS WMH CAN OFFER FROM STOCK
PLEASE SEE OUR LINEAR MOTION STOCK CATALOGUE FOR MORE INFORMATION

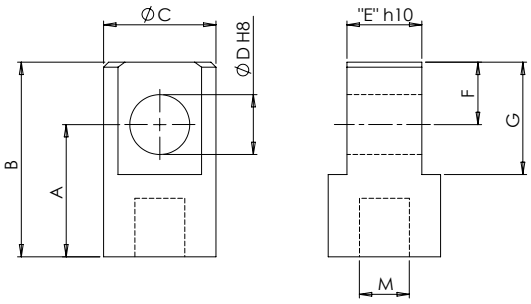
Head Accessories
For Type 1 Jacks

Size	A	B	C	D	E	F	M	Part Number
M0	16	6	26	50	40	7	M8	562-000-001
M1	20	7	30	65	448	9	M12	562-100-001
M2	21	8	40	80	60	11	M14	562-200-001
M3	23	10	45	90	67	11	M20	562-300-001
M4	30	15	60	110	85	13	M30	562-400-001
M5	50	20	85	150	117	17	M36	562-500-001
M6	60	30	120	220	170	25	M64	562-600-001
M7	80	40	145	250	205	32	M72	562-700-001
M8	120	40	170	310	240	38	M100	562-800-001



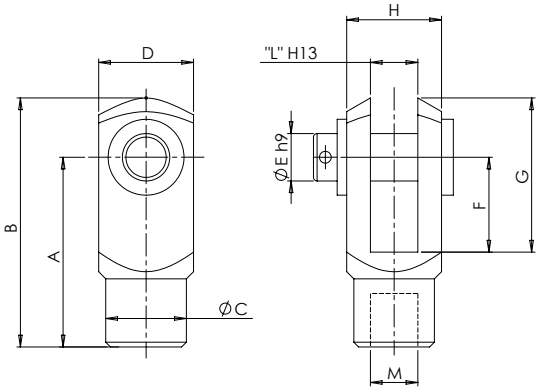
HEAD TYPE II

Size	A	B	C	D	E	F	G	M	Part Number
M0	30	40	25	10	12	10	20	M8	562-000-008
M1	40	55	30	14	15	15	30	M12	562-100-008
M2	45	63	40	16	20	18	36	M14	562-200-008
M3	53	78	45	24	30	25	45	M20	562-300-008
M4	70	105	60	32	35	35	65	M30	562-400-008
M5	97	147	85	40	40	50	83	M36	562-500-008
M6	105	175	120	60	80	70	130	M64	562-600-008
M7	135	220	160	80	110	85	170	M72	562-700-008
M8	200	330	170	90	120	130	230	M100	562-800-008



HEAD TYPE IV

Size	A	B	C	D	E	F	G	H	L	M	Part Number
M0	32	42	14	16	8	16	26	16	8	M8	562-000-002
M1	48	62	20	24	12	24	37	24	12	M12	562-100-002
M2	56	72	24	27	14	28	44	27	14	M14	562-200-002
M3	80	105	34	40	20	40	65	40	20	M20	562-300-002
M4	120	160	52	60	30	60	100	60	30	M30	562-400-002
M5	144	188	60	70	35	72	116	70	36	M36	562-500-002
M6	NOT AVAILABLE										
M7											
M8											



HEAD TYPE GK

THREADED HEAD TYPE III IS SUPPLIED AS STANDARD ON ALL TYPE 1 JACKS AND PLAIN JOURNAL TYPE I IS SUPPLIED AS STANDARD ON ALL TYPE 2 JACKS UNLESS OTHERWISE ADVISED

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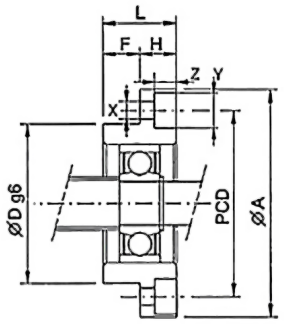
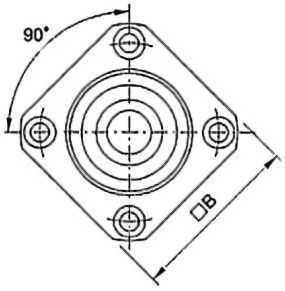
Head Accessories
For Type 2 Jacks

Type	Jack Size	Radial Load Capacity	
		Dyn KgF	Stat KgF
FF06	-	80	224
FF10	M0	130	330
FF12	M1	190	450
FF15	M2	280	560
FF17	-	480	950
FF20	M3	670	1300
FF25	-	795	1425
FF30	M4	1150	1990



BEARING DIMENSIONS



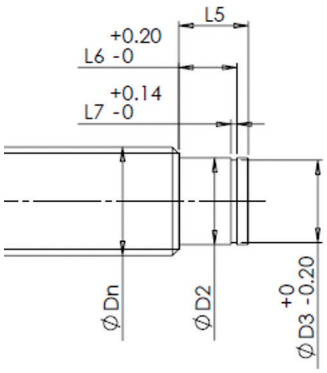
Type	Jack Size	ØD2	L	H	F	ØD	ØA	PCD	B	X	Y	Z
FF06	-	6	10	6	4	22	36	28	28	3.4	6.5	4.0
FF10	M0	8	12	7	5	28	43	35	35	3.4	6.5	4.0
FF12	M1	10	15	7	8	34	52	42	42	4.5	8.0	4.0
FF15	M2	15	17	9	8	40	63	50	52	5.5	9.5	5.5
FF17	-	17	20	11	9	50	77	62	61	6.6	11.0	6.5
FF20	M3	20	20	11	9	57	85	70	68	6.6	11.0	6.5
FF25	-	25	24	14	10	63	98	80	79	9.0	15.0	8.5
FF30	M4	30	27	18	9	75	117	95	93	11.0	17.5	11.0

WMH FF series support bearings can be used to allow type 2 travelling nut type screw jacks to have greater compressive load capacities at longer strokes compared to being unsupported. The bearings help keep the screw thread supported and prevent any lateral deviation from the centre line of the screw thread and can help reduce buckling and whip.

WMH can also tailor the screw end machining to suit any bearing pack arrangement so please contact us with your specific requirements or design queries.

Type	Jack Size	ØD2		L5	ØD3	L6	L7
FF06	-	6	-0.004 -0.012	9	5.7	6.80	0.80
FF10	M0	8	-0.005 -0.012	10	7.6	7.90	0.90
FF12	M1	10	-0.005 -0.014	11	9.6	9.15	1.15
FF15	M2	15	-0.005 -0.014	13	14.3	10.15	1.15
FF17	-	17	-0.005 -0.014	16	16.2	13.15	1.15
FF20	M3	20	-0.005 -0.014	19	19.0	15.35	1.35
FF25	-	25	-0.005 -0.014	20	23.9	16.35	1.35
FF30	M4	30	-0.005 -0.015	21	28.6	17.75	1.75

MACHINING DETAILS



AS WELL AS OUR RANGE OF STANDARD PRODUCTS WE CAN ALSO OFFER IN HOUSING MACHINING AND CUSTOM MODIFICATIONS ON REQUEST – PLEASE CONTACT OUR SALES TEAM

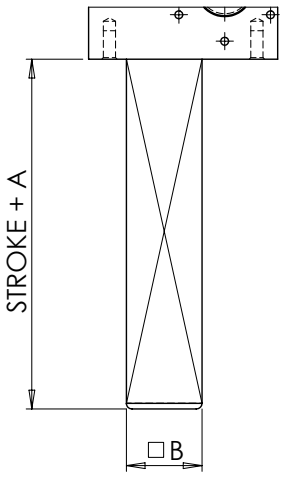
Anti-turn / Bellows / Brackets
For Type 1 & 2 Jacks

WMH travelling screw jacks as standard are not fitted with any device to prevent screw rotation.

In many applications, it is critical that the screw thread does not rotate to any degree. Anti-rotation can be achieved by replacing the standard round protective tube with a square profile instead.

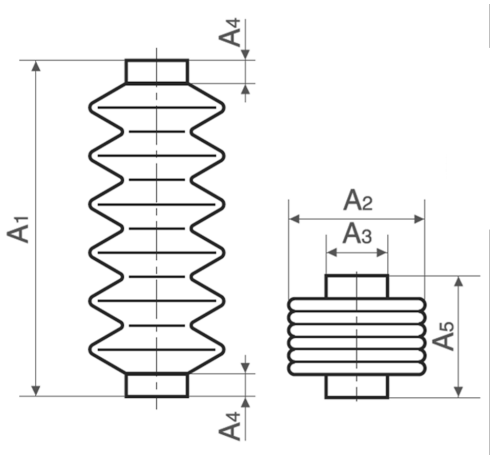
A square nut is then fitted to the end of the screw which slides within the square profile but cannot rotate due to its shape and thus prevents the screw from rotating during operation.

Size	A	B
M0	NOT AVAILABLE	
M1	60	35
M2	70	40
M3	80	50
M4	100	70
M5	115	90
M6	120	125
M7	125	150
M8	155	180

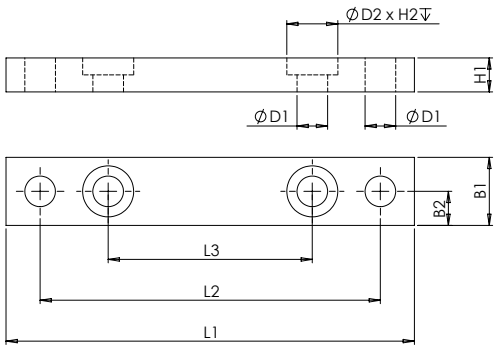


Size	A1	A2	A3	A4	A5	Part Number
M0	DEPENDENT ON STROKE	66	29	12	DEPENDENT ON STROKE	562-000-005 / STROKE*
M1		66	29	12		562-100-005 / STROKE*
M2		80	39	12		562-200-005 / STROKE*
M3		90	46	12		562-300-005 / STROKE*
M4		110	60	12		562-400-005 / STROKE*
M5		150	85	12		562-500-005 / STROKE*
M6		170	90	12		562-600-005 / STROKE*
M7		220	120	12		562-700-005 / STROKE*
M8		250	145	12		562-800-005 / STROKE*

* Please advise stroke when ordering as dimensions shown above are likely to change.



Size	L1	L2	L3	B1	B2	D1	D2	H1	H2	Part Number
M0	90	75	48	12	6	6.6	11	10	5	562-000-003
M1	120	100	60	20	10	9.0	15	10	5	562-100-003
M2	140	120	78	20	11	9.0	15	10	6	562-200-003
M3	170	150	106	25	12	11.0	18	12	7	562-300-003
M4	230	204	150	30	15	13.5	20	16	8	562-400-003
M5	270	236	166	40	17	22.0	33	25	14	562-500-003
M6	ON REQUEST									562-600-003
M7										562-700-003
M8										562-800-003



PLEASE NOTE ANTI-TURN DEVICES ARE ONLY AVAILABLE ON TYPE 1 TRAVELLING SCREW JACKS
SPECIAL BELLOW DESIGNS AND CONFIGURATIONS ARE AVAILABLE ON REQUEST

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sales@wmh-trans.co.uk
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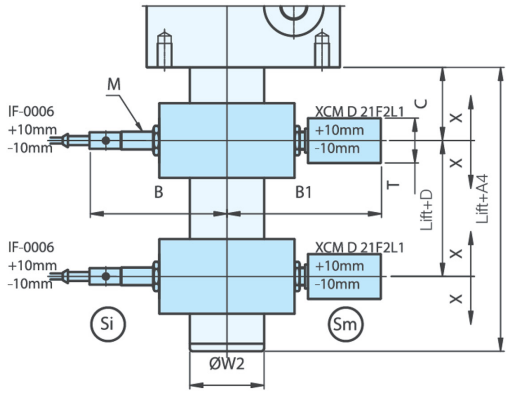
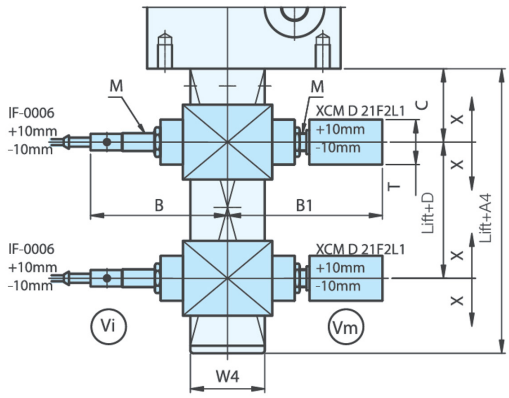
Limit Switches
For Type 1 Jacks

WMH Cubic travelling screw type 1 jacks can be fitted with either mechanical (Sm) or inductive (Si) type limit switches to precisely control maximum stroke travel.



Size	A4	B	B1	C Sm/Si	D Sm/Si	T	M	W2	X
M0	105	84	95	44 / 38	12 / 24	50	M12 x 1	28	+ / - 10
M1	105	86	97	44 / 38	12 / 24	50	M12 x 1	32	+ / - 10
M2	110	90	100	44 / 38	16 / 28	50	M12 x 1	40	+ / - 10
M3	115	94	104	49 / 43	16 / 28	50	M12 x 1	50	+ / - 10
M4	135	101	111	58 / 52	20 / 32	50	M12 x 1	65	+ / - 10
M5	140	114	123	66 / 60	20 / 32	50	M12 x 1	90	+ / - 10
M6	135	ON REQUEST		66 / 60	25 / 37	50	M12 x 1	125	+ / - 10
M7	170			76 / 70	30 / 42	50	M12 x 1	150	+ / - 10
M8	160			86 / 80	30 / 42	50	M12 x 1	180	+ / - 10

WMH jacks fitted with an anti-turn square tube can be also be fitted with either mechanical (Vm) or inductive (Vi) type limit switches to precisely control maximum stroke travel.



Size	A4	B	B1	C Vm/Vi	D Vm/Vi	T	M	W4	X
M0	NOT AVAILABLE								
M1	105	86	96	44 / 38	12 / 24	50	M12 x 1	35x35	+ / - 10
M2	110	88	100	44 / 38	16 / 28	50	M12 x 1	40x40	+ / - 10
M3	115	93	105	49 / 43	16 / 28	50	M12 x 1	50x50	+ / - 10
M4	135	101	110	58 / 52	20 / 32	50	M12 x 1	70x70	+ / - 10
M5	145	113	125	66 / 60	20 / 32	50	M12 x 1	90x90	+ / - 10
M6	135	ON REQUEST		66 / 60	25 / 37	50	M12 x 1	125x125	+ / - 10
M7	170			76 / 70	30 / 42	50	M12 x 1	150x150	+ / - 10
M8	160			86 / 80	30 / 42	50	M12 x 1	180x180	+ / - 10

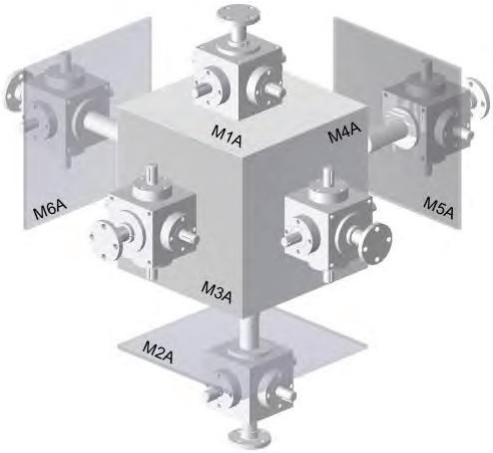
PLEASE SPECIFY WHICH TYPE OF LIMIT SWITCH IS REQUIRED (MECHANICAL OR INDUCTIVE) AND IF ANTI-TURN TUBES ARE TO BE FITTED WHEN ORDERING AS THERE IS NO SET DEFAULT

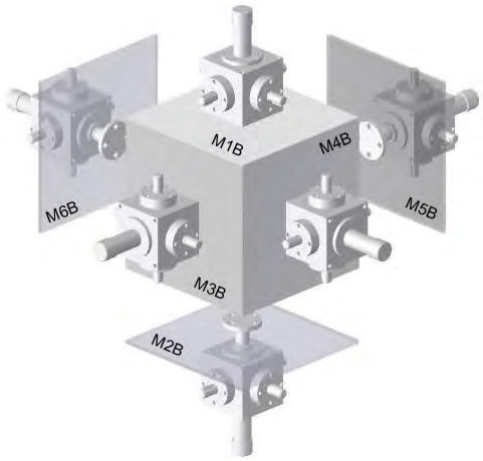
Order Codes

WMH Cubic screw jacks can be supplied singular, with additional accessories, pre-assembled, part of a larger assembly or modified specially to customer request.

These order codes are for standard jacks only, if you require additional accessories or modifications such as input shaft removal, special material specifications or ballscrew assemblies in place of standard leadscrews then please contact our sales team for a competitive quote.

Please ensure to specify mounting position when ordering (referring to the layout images below) so that we can check lubrication requirements of your application.





56 3 - 2 04 - 015

WMH Cubic Screw Jacks

Travel type

2 = Type 1 Travelling Screw
3 = Type 2 Travelling Nut

Jack size

0 = M0
1 = M1
2 = M2
3 = M3
4 = M4
5 = M5
6 = M6
7 = M7
8 = M8

Jack ratio

Stroke (cm)

E.G. 015 = 150mm Stroke

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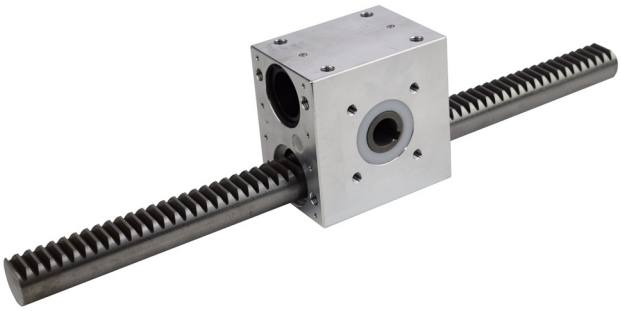
Rack Jacks
Fast Acting – Round Rack Type

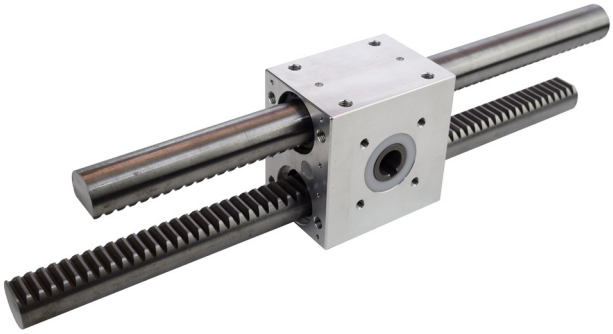
The unique range of WMH rack jacks transforms rotational motion into linear motion and vice versa providing rapid, synchronous positioning in any direction.

A simple mechanical principle and robust compact housings ensures a durable, repeatable and reliable operation:

- **Simple and economical lifting devices**
- **Robust design for long service life and continuous use**
- **High bending stiffness due to the large diameter and wide toothing of the rack**
- **Robust sliding guide for the rack**
- **Simple structure, high repeatability**
- **Lifting speeds up to 600 mm/s with precise positioning in the lifting direction**
- **Complete range consisting of 3 sizes with up to 800 kg lifting capacity**
- **All sizes with same design principle and functionality**
- **Numerous mounting options including flange connections**
- **4 pinion shaft interfaces for each size**



Single Rack

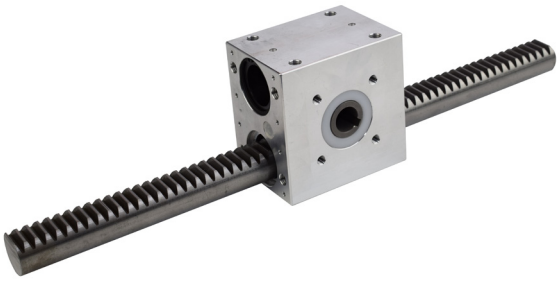


Twin Rack

Rack Jacks

Rack Jack Specific Accessories

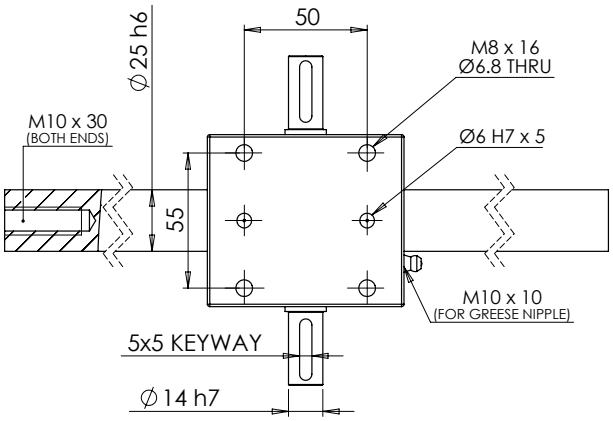
R1 - 80 kg Capacity
Single Travelling Rack



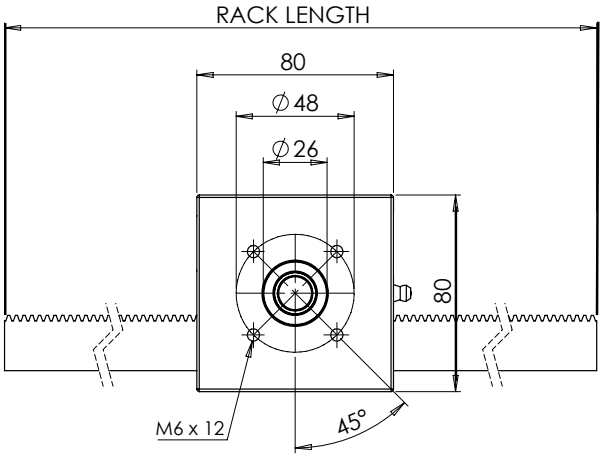
Model	541-131-923
Travel per Input rev (mm)	62.8318
Max. Travel Speed (mm/s)	600
Max. Acceleration (m/s²)	30
Max. Input Speed (rpm)	573
Max. Input Torque (Nm)	8
Max. Capacity (kg)	80
Material of Body	Aluminium
Material of Rack*	ETG100
Rack Weight (kg/m)	3.5
Module	1
Tooth Quality	8 h27
Pinion No of Teeth	20
Standard Rack No of Teeth**	923
Theor. Rack Length (mm)**	2900

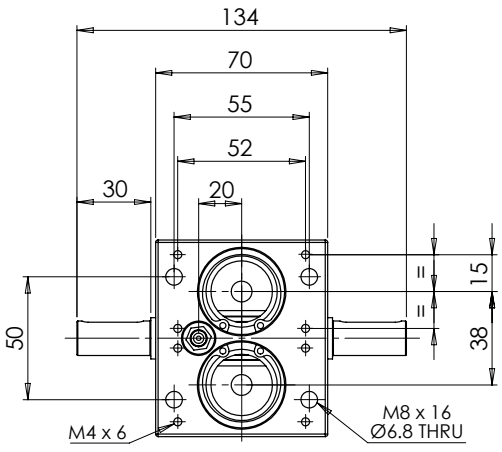
* ETG100 high quality alloy steel has 960-1100 N/mm² tensile strength

** Maximum available rack length / number of teeth
(Shorter lengths available upon request)



Shaft Option	Description
1	DIN ISO 14 Spline bore input 6 x 11 x 14
2	Input shaft one side only
3	Input shaft both sides
4	Hollow bore & key input Ø10mm h7 3x3 P9 keyway





NOTE: Example jack shown above with 1 rack and shaft option 3

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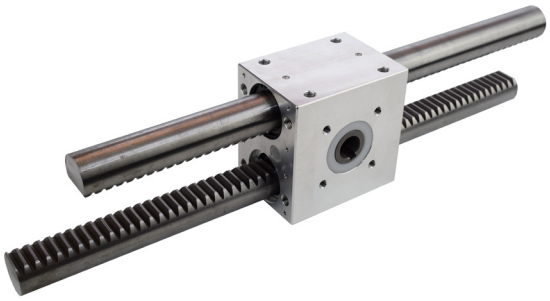
R1 - 80 kg Capacity
Twin Travelling Racks

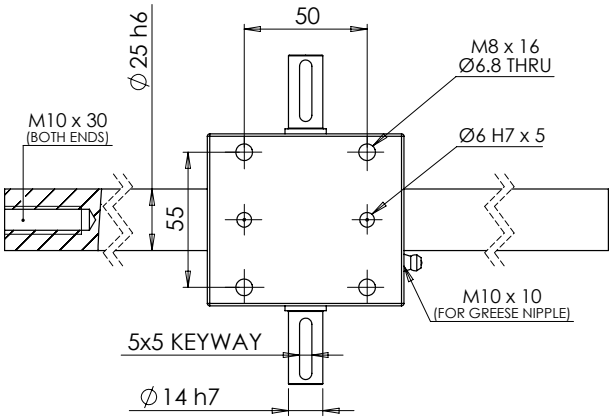


NOTE: Racks move in opposite directions when the input gear is rotated

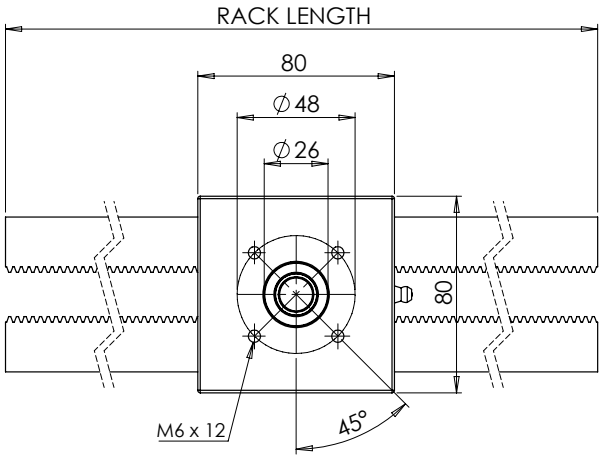
Model	541-132-923
Travel per Input rev (mm)	62.8318
Max. Travel Speed (mm/s)	600
Max. Acceleration (m/s²)	30
Max. Input Speed (rpm)	573
Max. Input Torque (Nm)	8
Max. Capacity (kg)	80
Material of Body	Aluminium
Material of Rack*	ETG100
Rack Weight (kg/m)	3.5
Module	1
Tooth Quality	8 h27
Pinion No of Teeth	20
Standard Rack No of Teeth**	923
Theor. Rack Length (mm)**	2900

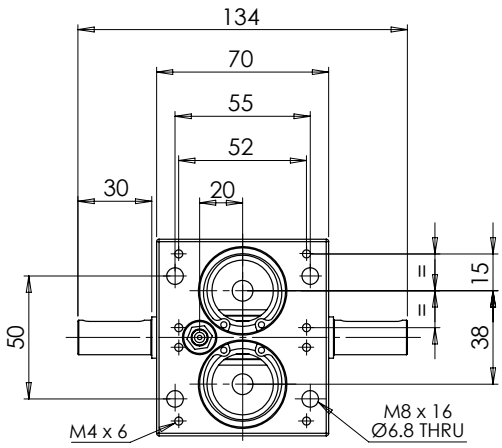
* ETG100 high quality alloy steel has 960-1100 N/mm² tensile strength

** Maximum available rack length / number of teeth
(Shorter lengths available upon request)



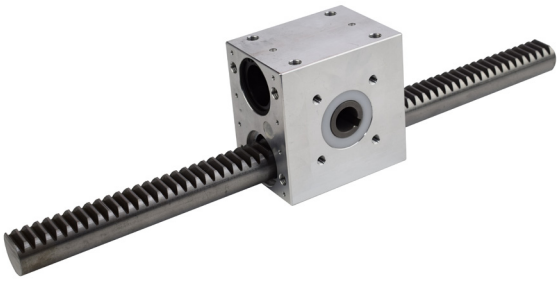
Shaft Option	Description
1	DIN ISO 14 Spline bore input 6 x 11 x 14
2	Input shaft one side only
3	Input shaft both sides
4	Hollow bore & key input Ø10mm h7 3x3 P9 keyway





NOTE: Example jack shown above with 2 racks and shaft option 3

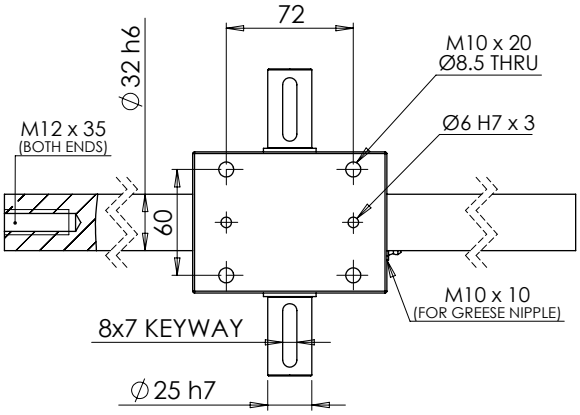
R2 - 200 kg Capacity
Single Travelling Rack



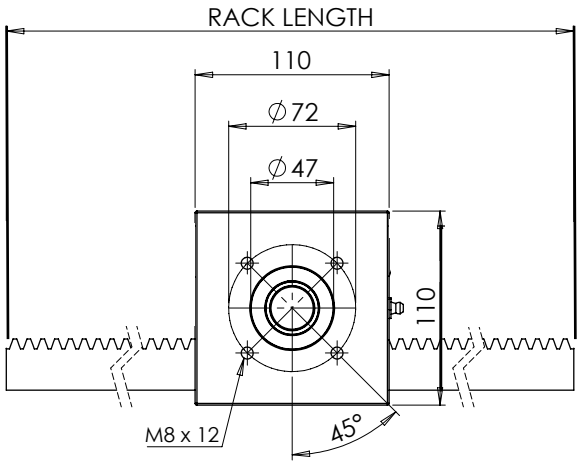
Model	541-231-369
Travel per Input rev (mm)	125.6637
Max. Travel Speed (mm/s)	600
Max. Acceleration (m/s²)	30
Max. Input Speed (rpm)	286
Max. Input Torque (Nm)	40
Max. Capacity (kg)	200
Material of Body	Aluminium
Material of Rack*	ETG100
Rack Weight (kg/m)	5.5
Module	2.5
Tooth Quality	8 h27
Pinion No of Teeth	16
Standard Rack No of Teeth**	369
Theor. Rack Length (mm)**	2900

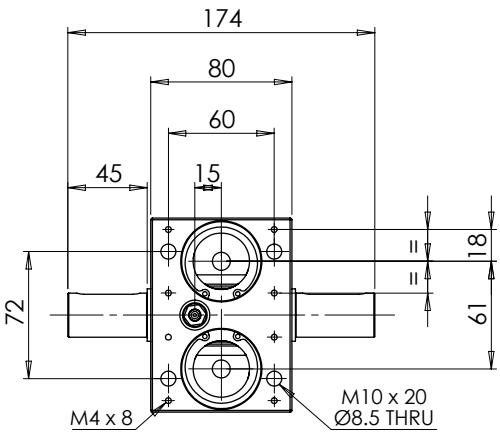
* ETG100 high quality alloy steel has 960-1100 N/mm² tensile strength

** Maximum available rack length / number of teeth
(Shorter lengths available upon request)



Shaft Option	Description
1	DIN ISO 14 Spline bore input 6 x 16 x 20
2	Input shaft one side only
3	Input shaft both sides
4	Hollow bore & key input Ø20mm h7 6x6 P9 keyway





NOTE: Example jack shown above with 1 rack and shaft option 3

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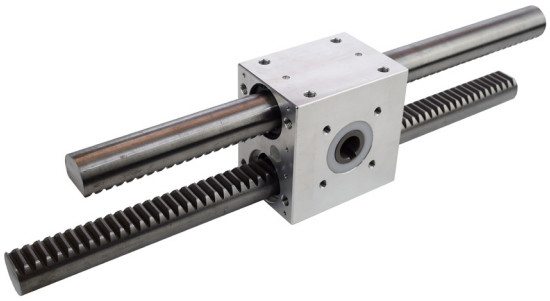
R2 - 200 kg Capacity
Twin Travelling Racks

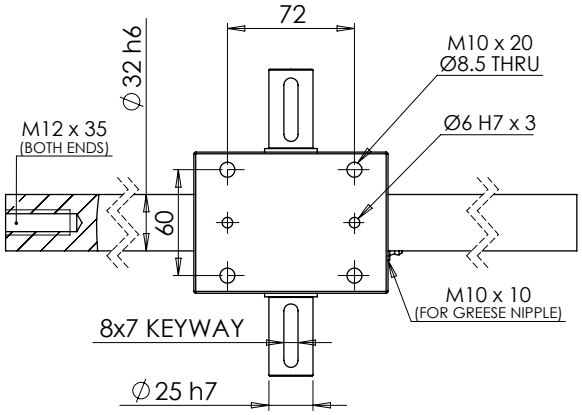


NOTE: Racks move in opposite directions when the input gear is rotated

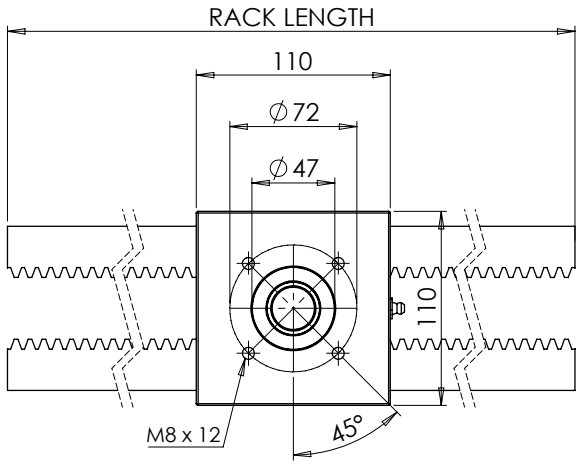
Model	541-232-369
Travel per Input rev (mm)	125.6637
Max. Travel Speed (mm/s)	600
Max. Acceleration (m/s²)	30
Max. Input Speed (rpm)	286
Max. Input Torque (Nm)	40
Max. Capacity (kg)	200
Material of Body	Aluminium
Material of Rack*	ETG100
Rack Weight (kg/m)	5.5
Module	2.5
Tooth Quality	8 h27
Pinion No of Teeth	16
Standard Rack No of Teeth**	369
Theor. Rack Length (mm)**	2900

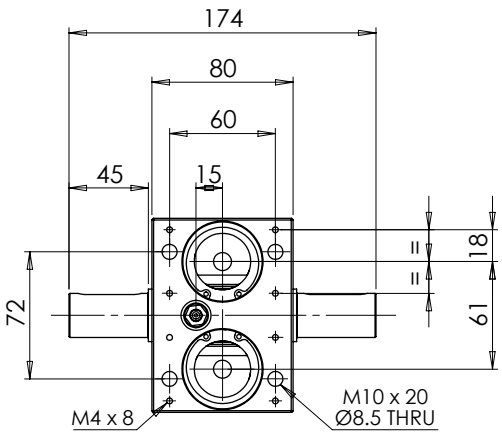
* ETG100 high quality alloy steel has 960-1100 N/mm² tensile strength

** Maximum available rack length / number of teeth
(Shorter lengths available upon request)



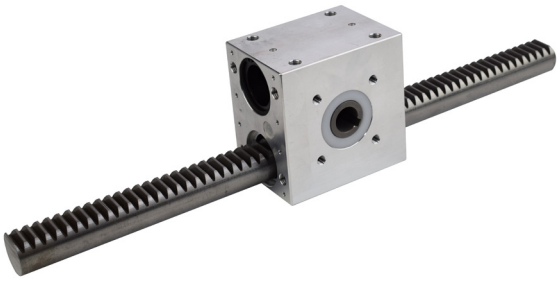
Shaft Option	Description
1	DIN ISO 14 Spline bore input 6 x 16 x 20
2	Input shaft one side only
3	Input shaft both sides
4	Hollow bore & key input Ø20mm h7 6x6 P9 keyway





NOTE: Example jack shown above with 2 racks and shaft option 3

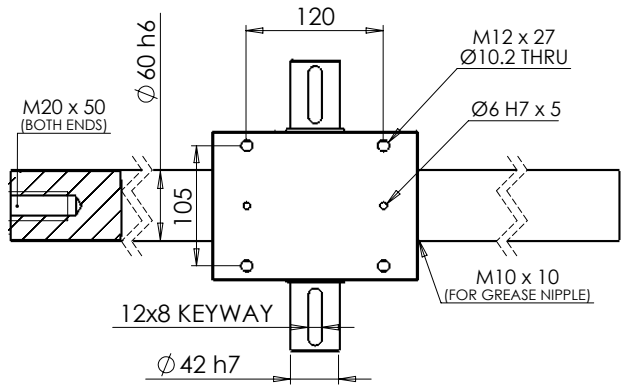
R3 - 800 kg Capacity
Single Travelling Rack



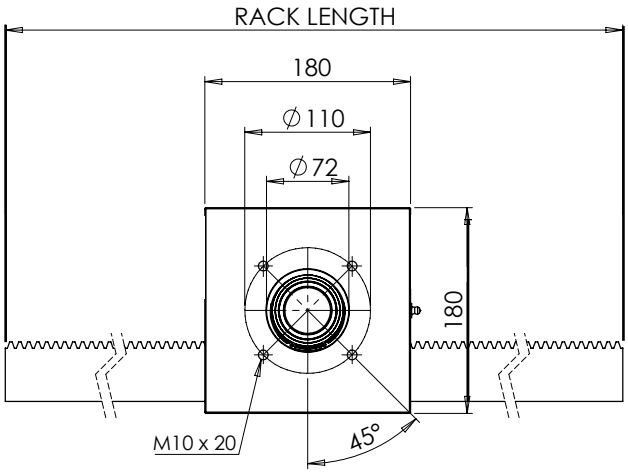
Model	541-331-369
Travel per Input rev (mm)	188.4955
Max. Travel Speed (mm/s)	600
Max. Acceleration (m/s²)	30
Max. Input Speed (rpm)	191
Max. Input Torque (Nm)	240
Max. Capacity (kg)	800
Material of Body	Aluminium
Material of Rack*	ETG100
Rack Weight (kg/m)	19.1
Module	2.5
Tooth Quality	8 h27
Pinion No of Teeth	24
Standard Rack No of Teeth**	369
Theor. Rack Length (mm)**	2900

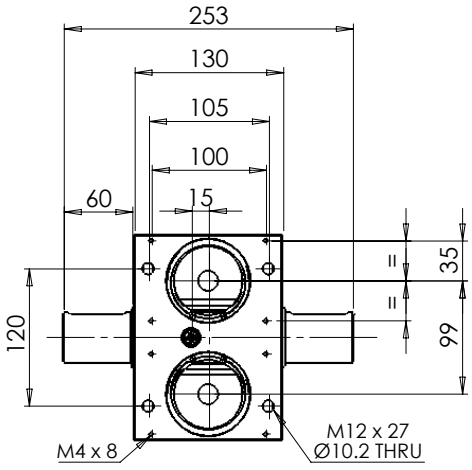
* ETG100 high quality alloy steel has 960-1100 N/mm² tensile strength

** Maximum available rack length / number of teeth
(Shorter lengths available upon request)



Shaft Option	Description
1	DIN ISO 14 Spline bore input 8 x 32 x 38
2	Input shaft one side only
3	Input shaft both sides
4	Hollow bore & key input Ø35mm h7 10x8 P9 keyway





NOTE: Example jack shown above with 1 rack and shaft option 3

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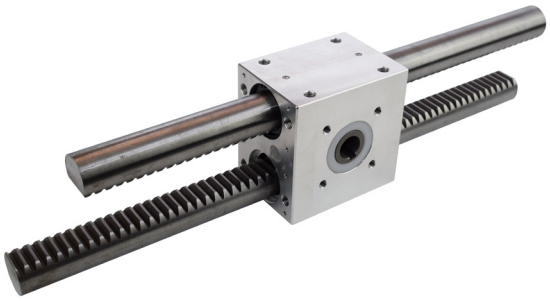
R3 - 800 kg Capacity
Twin Travelling Racks

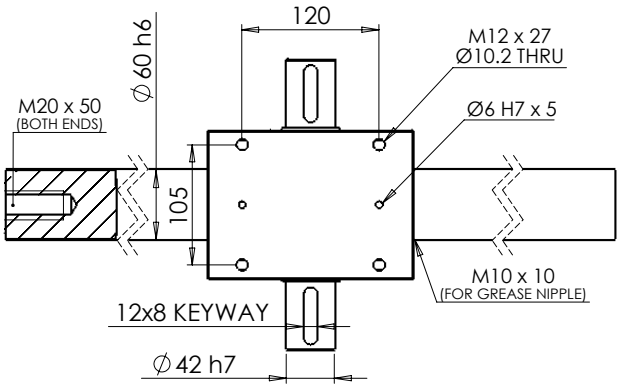


NOTE: Racks move in opposite directions when the input gear is rotated

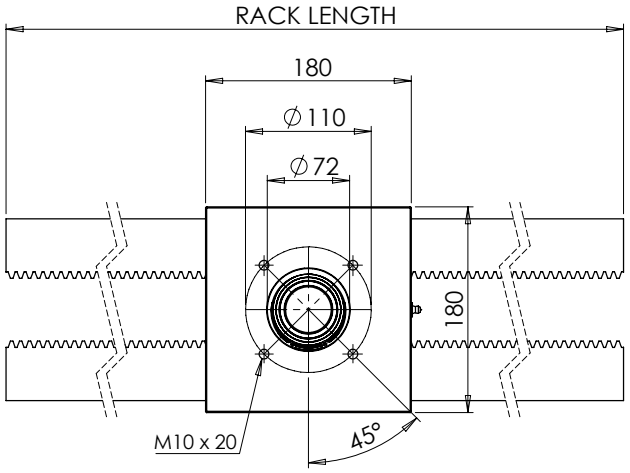
Model	541-332-369
Travel per Input rev (mm)	188.4955
Max. Travel Speed (mm/s)	600
Max. Acceleration (m/s²)	30
Max. Input Speed (rpm)	191
Max. Input Torque (Nm)	240
Max. Capacity (kg)	800
Material of Body	Aluminium
Material of Rack*	ETG100
Rack Weight (kg/m)	19.1
Module	2.5
Tooth Quality	8 h27
Pinion No of Teeth	24
Standard Rack No of Teeth**	369
Theor. Rack Length (mm)**	2900

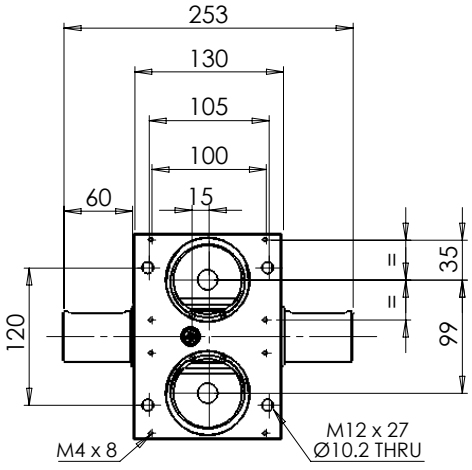
* ETG100 high quality alloy steel has 960-1100 N/mm² tensile strength

** Maximum available rack length / number of teeth (Shorter lengths available upon request)



Shaft Option	Description
1	DIN ISO 14 Spline bore input 8 x 32 x 38
2	Input shaft one side only
3	Input shaft both sides
4	Hollow bore & key input Ø35mm h7 10x8 P9 keyway





NOTE: Example jack shown above with 2 racks and shaft option 3

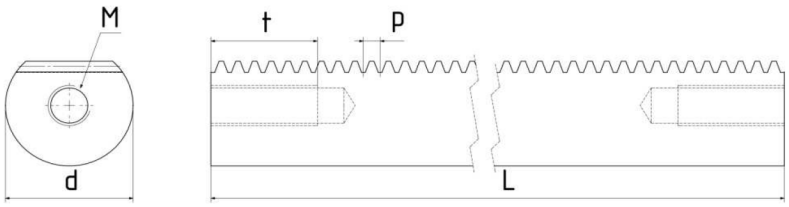
Round Type Racks
High Tensile Alloy Steel

WMH rack jacks feature specially made round type racks. They have increased section diameter and tooth width over standard round racks as well as squared-off tooth profiles to prevent rotation within the jack body. The racks are also made from high tensile ETG100 alloy steel to increase the capacity of the jacks.

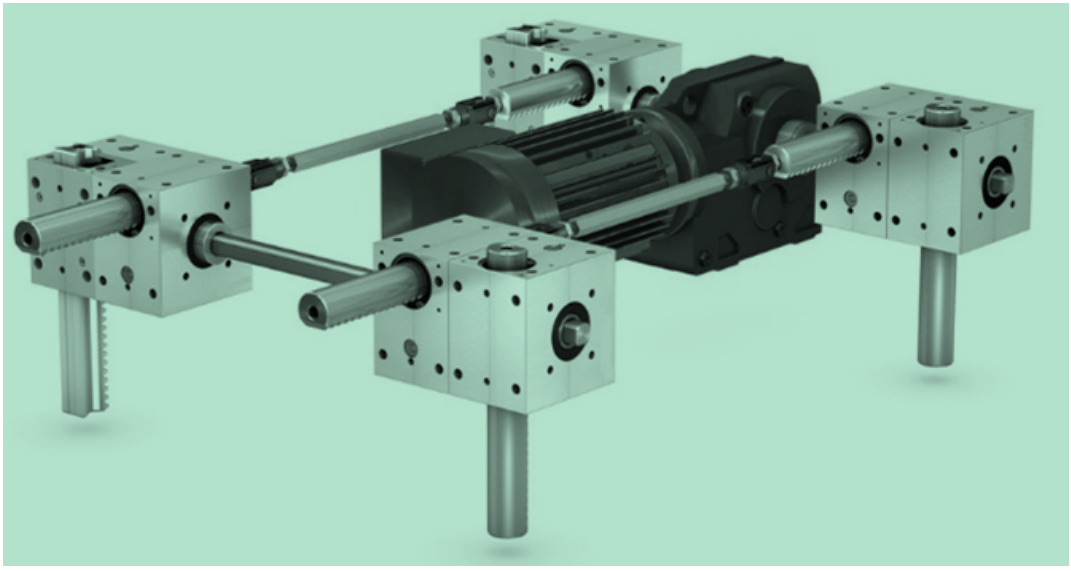
WMH rack jacks require protection against side and transverse loads as they can only transfer tensile and compressive forces.

This support is usually done via the use of linear guides or ball bushes running parallel with the rack travel.

Please contact our sales team for information on the options available from stock.



Size	Module	Ød h6	M x t	kg / m	Pitch
R1	1.0	25	M10 x 30	3.5	3.1416
R2	2.5	32	M12 x 35	5.5	7.8540
R3	2.5	60	M20 x 50	19.1	7.8540



AS WELL AS OUR RANGE OF STANDARD PRODUCTS WE CAN ALSO OFFER IN HOUSING MACHINING AND CUSTOM MODIFICATIONS ON REQUEST – PLEASE CONTACT OUR SALES TEAM

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FAX: 01827 253390
www.wmh-trans.co.uk
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Protective Bellows
For Rack Jacks

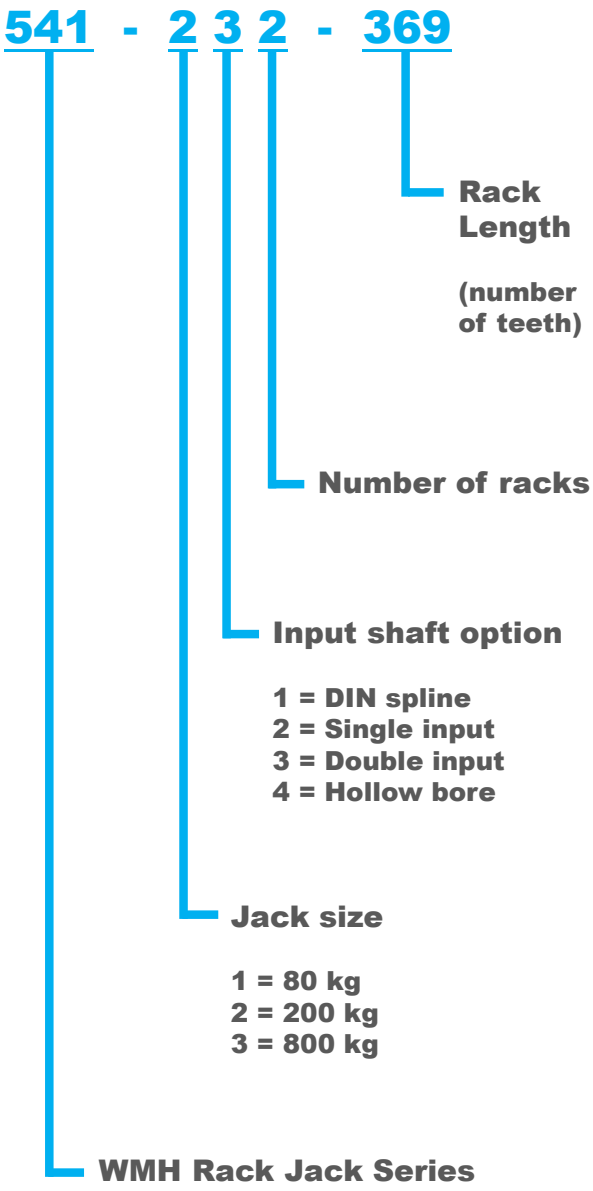
WMH rack jacks can be fitted with optional protective bellows for use in environments that are heavily contaminated with dust, metal swarf or other airborne debris.

Bellows protect the racks from contamination and accumulation of dirt and dust and prevent damage to the rack by foreign particles.

The protective cover is easy to use and is designed and customised for each application so please advise dimensions and environment when enquiring with our internal sales team.

WE CAN OFFER BESPOKE MACHINED RACKS AND PROTECTION COVERS TO YOUR SPECIFICATION
PLEASE CONTACT OUR SALES TEAM FOR DETAILS AND PRICES

Rack Jack Order Codes



WMH Rack jacks can be supplied singular, with additional accessories, part of a larger assembly or modified specially to customer request.

These order codes are for standard jacks only, if you require additional accessories or modifications such as special input shafts, motor flanges or specific rack end machining then please contact our sales team for a competitive quotation.

AS WELL AS OUR RANGE OF STANDARD PRODUCTS WE CAN ALSO OFFER IN HOUSING MACHINING AND CUSTOM MODIFICATIONS ON REQUEST – PLEASE CONTACT OUR SALES TEAM

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WMH Transmissions Limited

Spiral Bevel Gearboxes

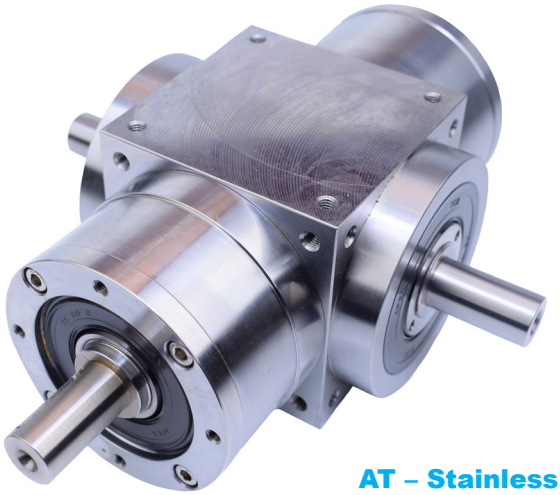
The WMH AT series is a range of high precision spiral bevel reduction gearboxes which feature precision machined surfaces on each face of the centre body for greater design flexibility and ease of installation. Spiral bevel gears have been optimised to give smooth power transmission, high torque capacity and low backlash combined with lower noise levels.

The WMH AT series is available with either stainless steel (AT) or blacked carbon steel (ATB) construction with both having the same dimensions and performance.

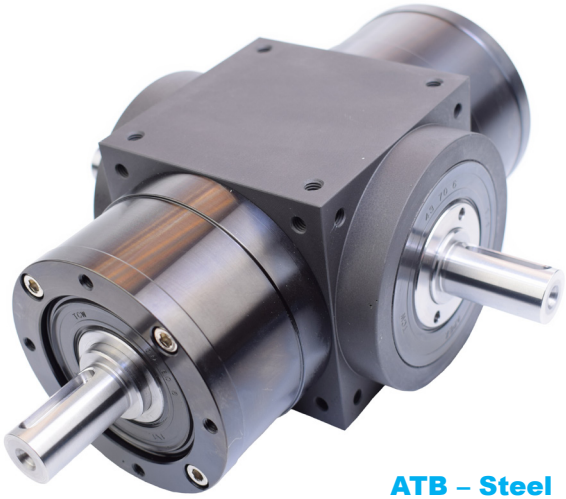
The AT-L series is a range of traditional bevel gearboxes with one or two solid output shafts available in 1:1 up to 5:1 reduction ratios. The AT-M series is based on the regular series but the internal gearing is altered to give opposite rotation across the body in LM and RM format and has the option of three output shafts in the 4M series giving the flexibility to drive any number of connected screw jacks.

Spiral Bevel Gearboxes

Technical & Order Codes

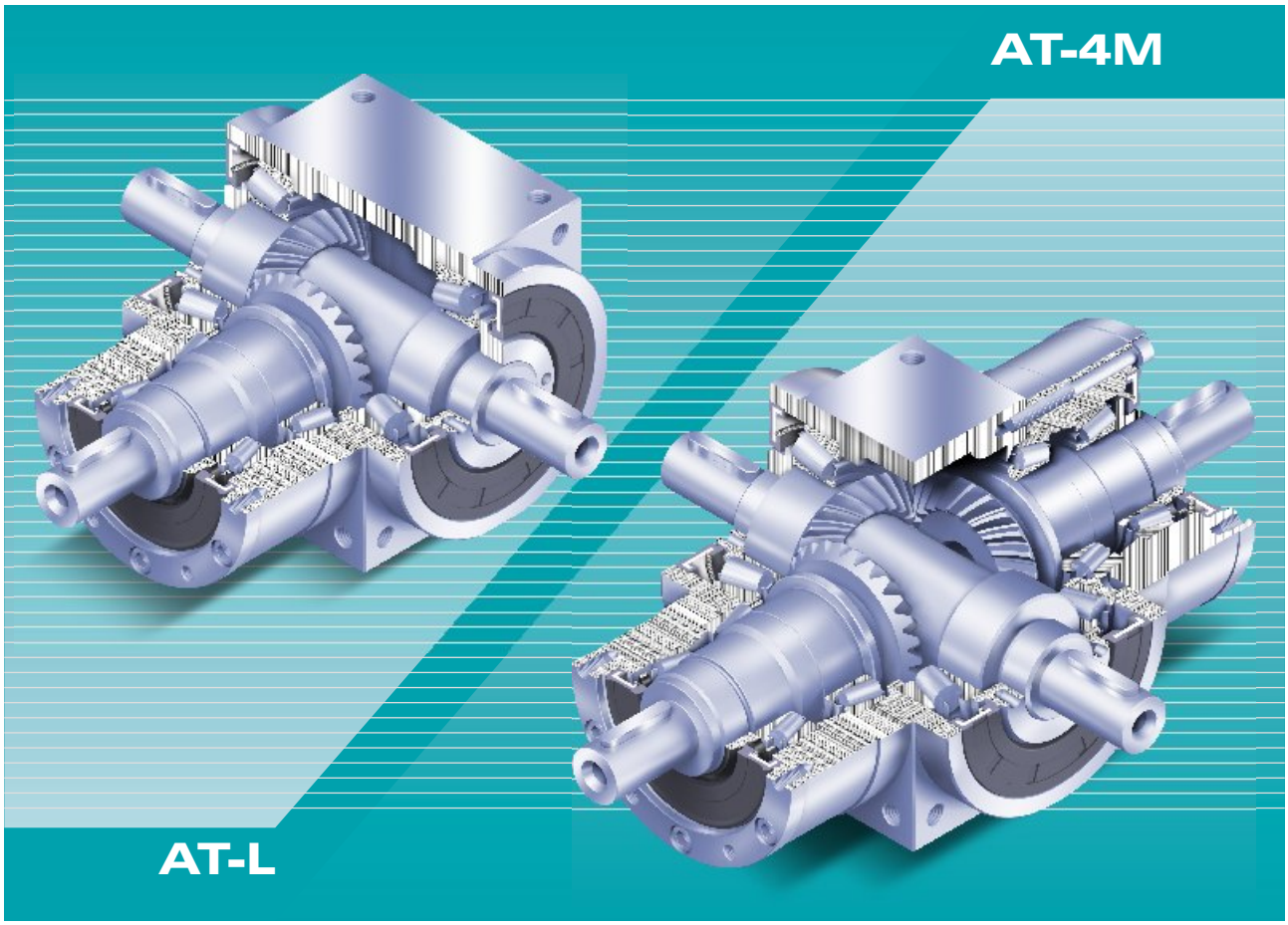


AT – Stainless



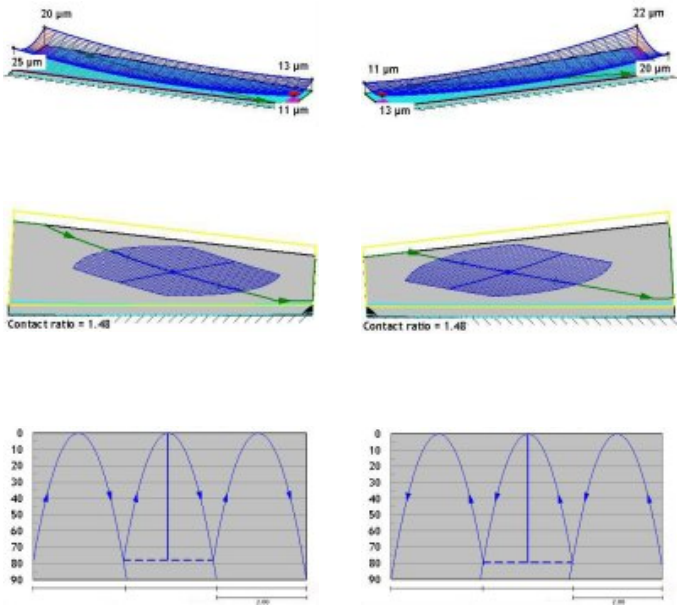
ATB – Steel

Gearbox Overview



The performance, dimensions and other specifications of both the AT and ATB series are identical

- **Single piece stainless steel (AT) and steel (ATB) housings for maximum rigidity**
- **Multiple precision machined surfaces for ease of installation**
- **Gearing design is optimised by state of the art software for highest performance**
- **Carburised high tensile alloy steel is precision ground to exceed DIN 5 specifications**
- **Stainless steel input and output shaft with multiple design configurations to meet all industrial requirements**
- **High precision ground spiral bevel gear sets are combined with optimised planetary geometry to create reduction ratios up to 500:1**
- **High torque, low backlash and compact designs are ideal for all servo applications**
- **Maintenance free, lubricated for life**



ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

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Performance Summary

Parameter	Unit	Stage	Ratio	AT 065	AT 075	AT 090	AT 110	AT 140	AT 170	AT 210	AT 240	AT 280
Nominal Output Torque	Nm	1	1:1	25	45	78	150	360	585	1300	2150	3200
			1.5:1	25	45	78	150	360	585	1300	2150	3200
			2:1	24	42	68	150	330	544	1220	2010	3050
			3:1	18	33	54	120	270	450	1020	1650	2850
			4:1	13	28	48	100	224	376	860	1410	2300
			5:1	12	25	40	85	196	320	740	1210	2000
		2	7:1	12	12	33	91	91	91	195	358	358
			10:1	24	28	68	150	208	208	430	846	846
			15:1	18	33	54	120	270	312	645	1269	1269
			20:1	13	28	48	100	224	376	860	1410	1692
			25:1	12	25	40	85	196	320	740	1210	2000
			35:1	12	25	40	85	196	320	740	1210	1790
			50:1	12	25	40	85	196	320	740	1210	1465
		3	75:1	-	-	-	120	210	312	585	1269	1269
			100:1	-	-	-	100	224	376	780	1410	1692
			125:1	-	-	-	85	196	320	740	1210	2000
			150:1	-	-	-	120	135	312	390	975	975
			200:1	-	-	-	100	180	376	520	1300	1300
			250:1	-	-	-	85	196	320	650	1210	1625
			350:1	-	-	-	85	196	320	740	1210	1790
			500:1	-	-	-	85	196	320	740	1210	1465
Max Acceleration Torque	Nm	1 / 2 / 3	1 ~ 500	1.5 x Nominal Output Torque								
Nom Output Speed	rpm	1 / 2 / 3	1 ~ 500	1500								
Max Output Speed	rpm	1	1 ~ 5	7500	6500	5500	4500	3500	3000	2200	2000	1700
		2	7 ~ 50	8000	8000	6000	6000	6000	6000	4800	3600	3600
		3	75 ~ 500	-	-	-	8000	8000	6000	6000	6000	6000
Backlash *	Arcmin	1	1 ~ 5	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6
		2	7 ~ 50	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8
		3	75 ~ 500	-	-	-	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Max Radial Load Input	N	1 / 2 / 3	1 ~ 500	700	950	1450	2100	2700	3800	7800	9600	10500
Max Radial** Load Output	N	1 / 2 / 3	1 ~ 500	900	1100	1700	2700	4800	6600	11500	16000	18000
Max Axial Load Input	N	1 / 2 / 3	1 ~ 500	350	425	725	1050	1350	1900	3900	4800	5250
Max Axial** Load Output	N	1 / 2 / 3	1 ~ 500	450	550	850	1350	2400	3300	5750	8500	9000
Efficiency	%	1	1 ~ 5	≥ 98								
		2 / 3	7 ~ 500	≥ 94								
Operating Temperature	°C	1 / 2 / 3	1 ~ 500	-10 ~ +90								
Protection Rating	IP	1 / 2 / 3	1 ~ 500	IP65								
Noise ***	dB (A)	SHAFT	1 ~ 5	≤ 68	≤ 70	≤ 74	≤ 76	≤ 77	≤ 78	≤ 80	≤ 82	≤ 83
		FLANGE	1 ~ 500	≤ 71	≤ 72	≤ 76	≤ 77	≤ 78	≤ 79	≤ 81	≤ 83	≤ 84

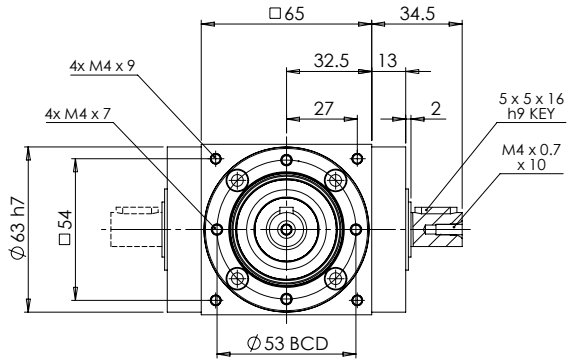
* Backlash is measured @ 2% nominal output torque

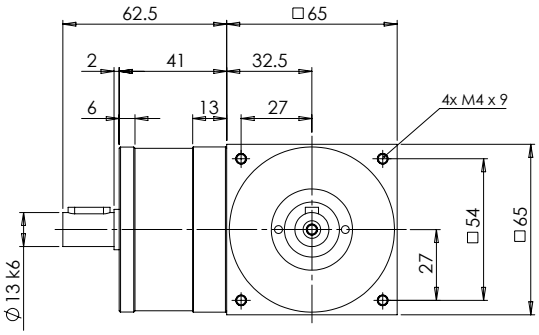
** Applied at centre of output shaft (Length/2)
For more information, see pages 68 & 69

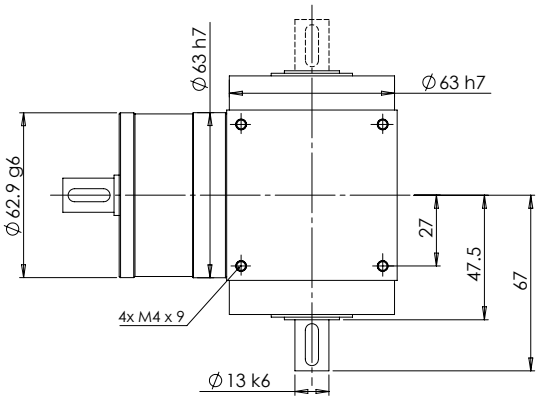
*** Based on 1:1 ratio @ 1500 rpm without load

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT065L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT065L = 1 Input, 2 Output
AT065L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT065R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	25	37.5	0.51
1.5:1	25	37.5	0.64
2:1	24	36.0	0.44
3:1	18	27.0	0.43
4:1	13	19.5	0.43
5:1	12	18.0	0.43
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	7500
Max. Axial Load on Input (N)*	350
Max. Axial Load on Output (N)*	450
Max. Radial Load on Input (N)*	700
Max. Radial Load on Output (N)*	900
Efficiency (%)	≥ 98
Unit weight (kg)	2.6
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 68

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

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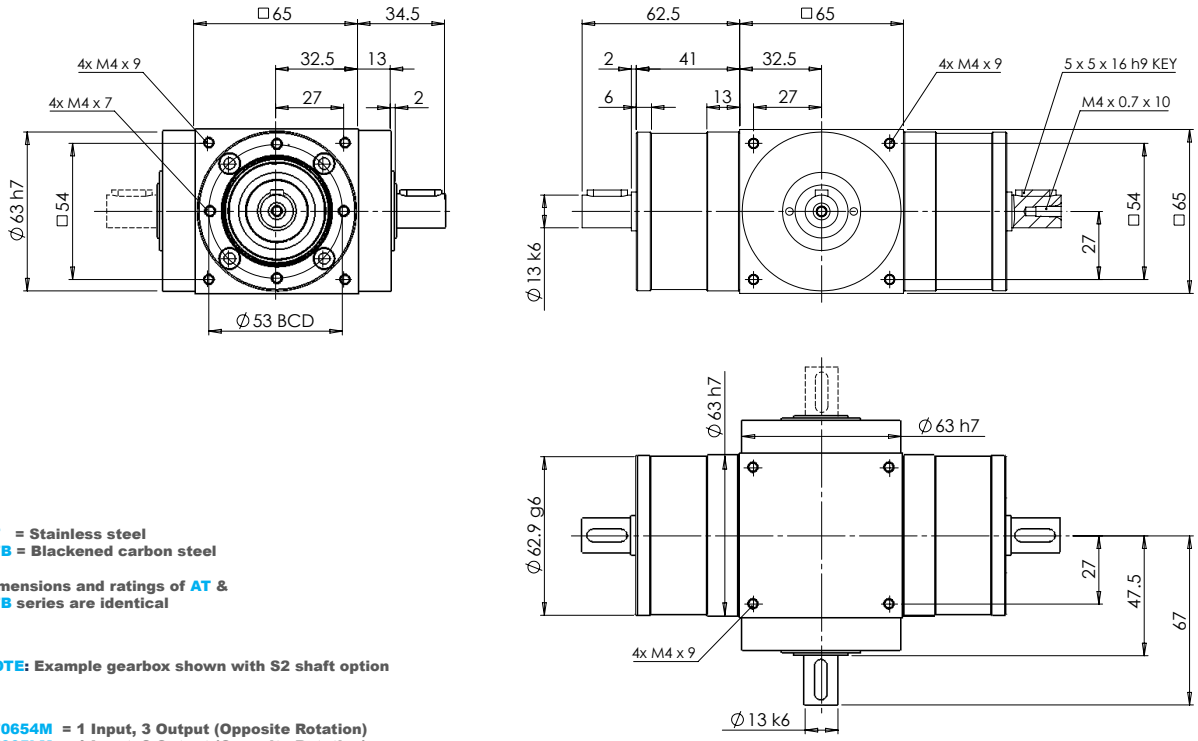
AT065M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT0654M = 1 Input, 3 Output (Opposite Rotation)
AT065LM = 1 Input, 2 Output (Opposite Rotation)
AT065RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	25	37.5	0.51
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	7500
Max. Axial Load on Input (N)*	350
Max. Axial Load on Output (N)*	450
Max. Radial Load on Input (N)*	700
Max. Radial Load on Output (N)*	900
Efficiency (%)	≥ 98
Unit weight (kg)	3.5
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 68

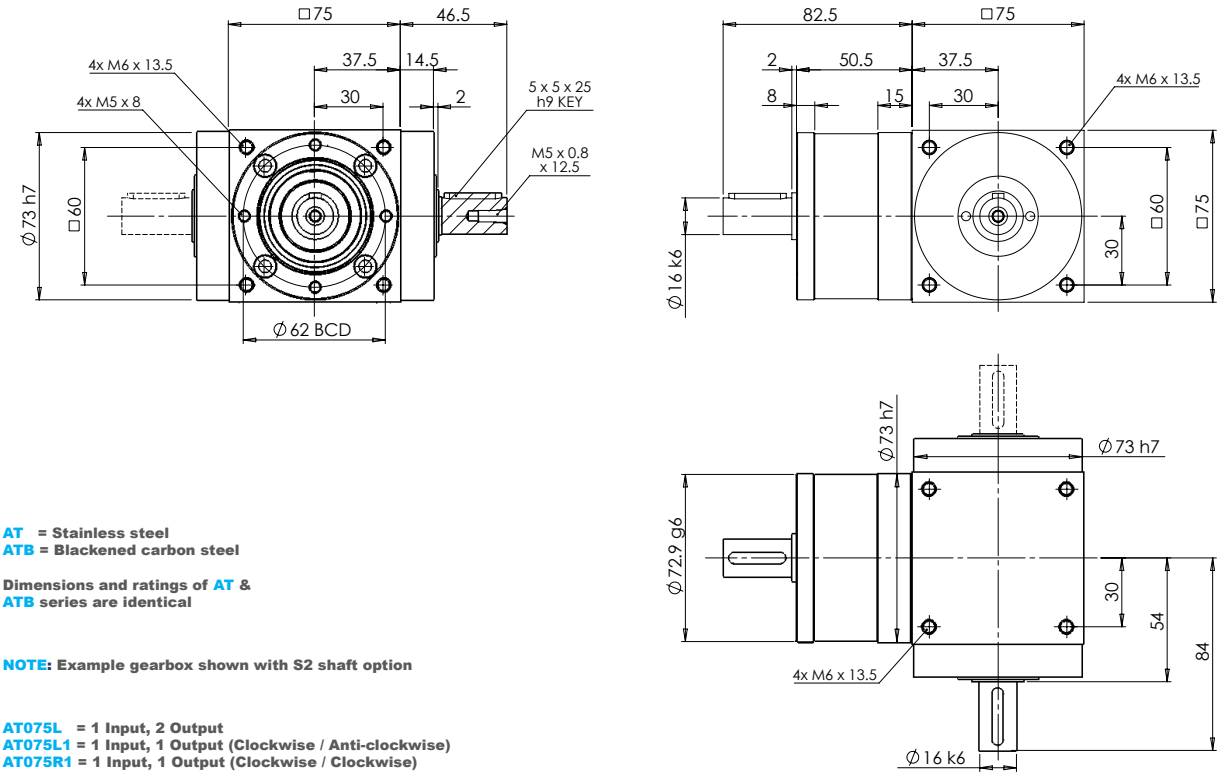
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT075L – Shaft Series
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of **AT** & **ATB** series are identical

NOTE: Example gearbox shown with S2 shaft option

AT075L = 1 Input, 2 Output
AT075L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT075R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	45	67.5	1.30
1.5:1	45	67.5	1.16
2:1	42	63.0	1.11
3:1	33	49.5	1.09
4:1	28	42.0	1.09
5:1	25	37.5	1.09
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	6500
Max. Axial Load on Input (N)*	425
Max. Axial Load on Output (N)*	550
Max. Radial Load on Input (N)*	950
Max. Radial Load on Output (N)*	1100
Efficiency (%)	≥ 98
Unit weight (kg)	4.2
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 70

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

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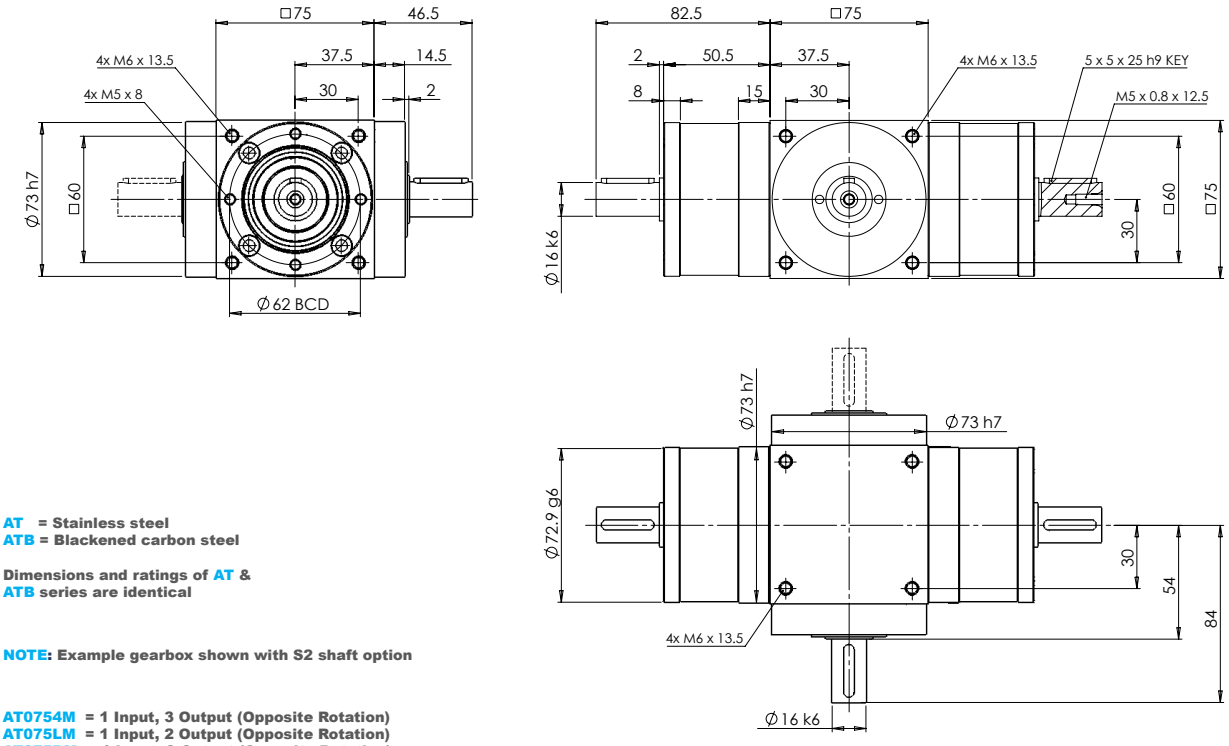
AT075M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT0754M = 1 Input, 3 Output (Opposite Rotation)
AT075LM = 1 Input, 2 Output (Opposite Rotation)
AT075RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	45	67.5	1.30
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	6500
Max. Axial Load on Input (N)*	425
Max. Axial Load on Output (N)*	550
Max. Radial Load on Input (N)*	950
Max. Radial Load on Output (N)*	1100
Efficiency (%)	≥ 98
Unit weight (kg)	5.6
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 70

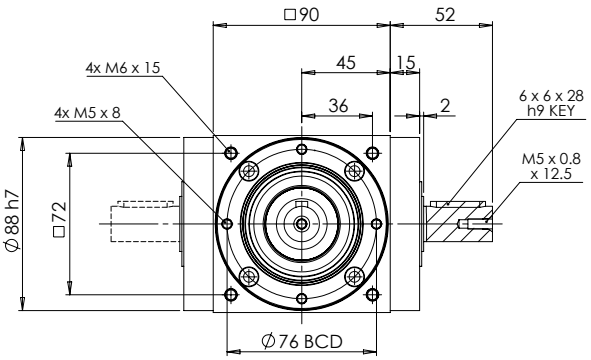
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

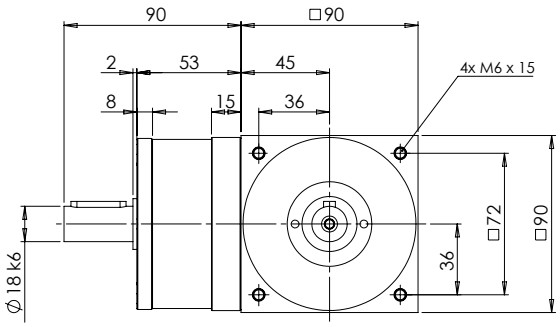
Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

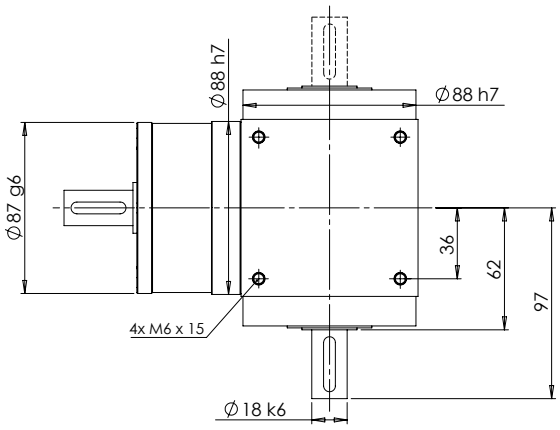
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT090L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of **AT** & **ATB** series are identical

NOTE: Example gearbox shown with S2 shaft option

AT090L = 1 Input, 2 Output
AT090L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT090R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	78	117.0	3.16
1.5:1	78	117.0	2.82
2:1	68	102.0	2.70
3:1	54	81.0	2.66
4:1	48	72.0	2.65
5:1	40	60.0	2.65
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	5500
Max. Axial Load on Input (N)*	725
Max. Axial Load on Output (N)*	850
Max. Radial Load on Input (N)*	1450
Max. Radial Load on Output (N)*	1700
Efficiency (%)	≥ 98
Unit weight (kg)	6.8
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 74

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

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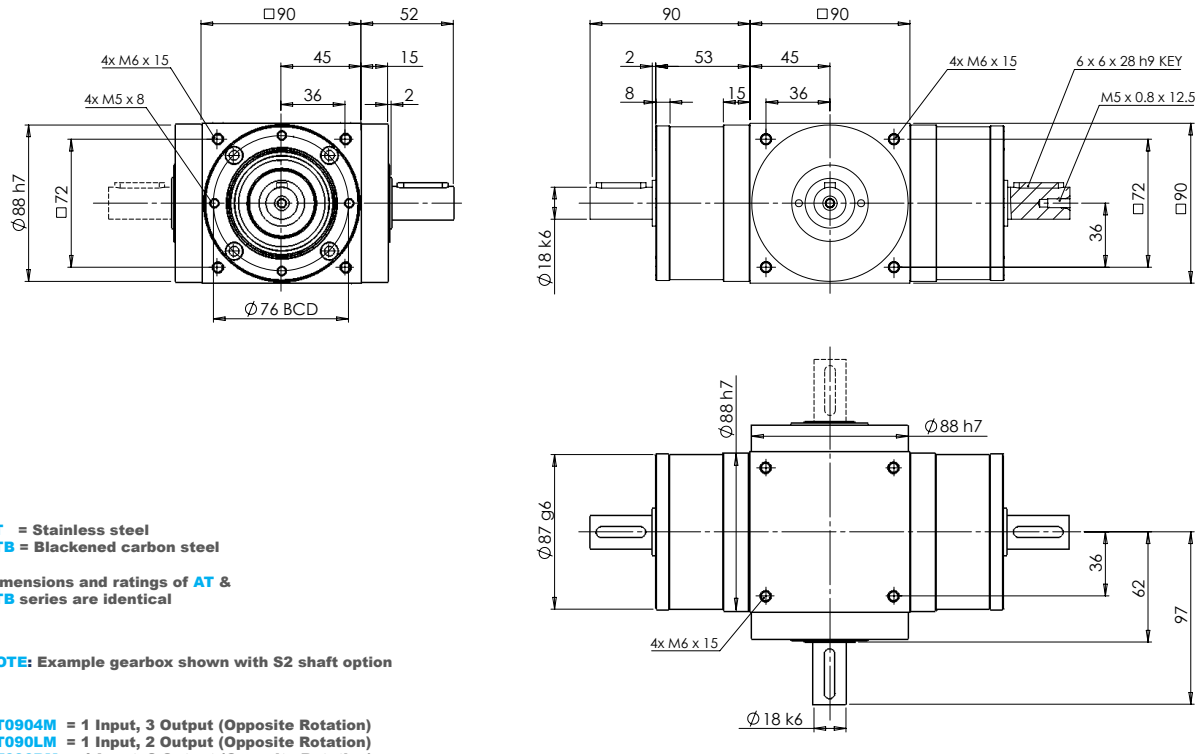
AT090M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT0904M = 1 Input, 3 Output (Opposite Rotation)
AT090LM = 1 Input, 2 Output (Opposite Rotation)
AT090RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	78	117.0	3.16
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	5500
Max. Axial Load on Input (N)*	725
Max. Axial Load on Output (N)*	850
Max. Radial Load on Input (N)*	1450
Max. Radial Load on Output (N)*	1700
Efficiency (%)	≥ 98
Unit weight (kg)	9.1
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 74

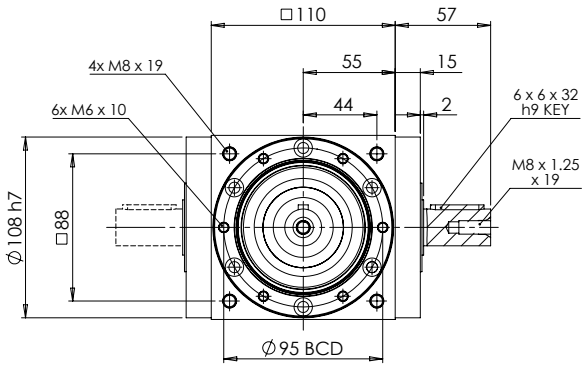
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

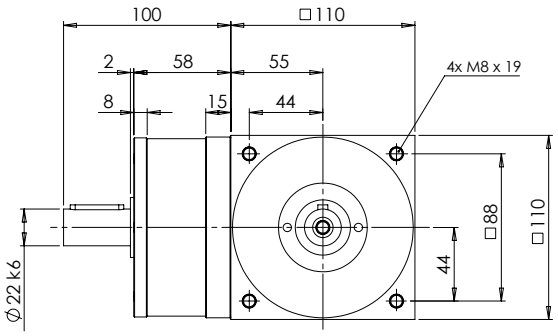
Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

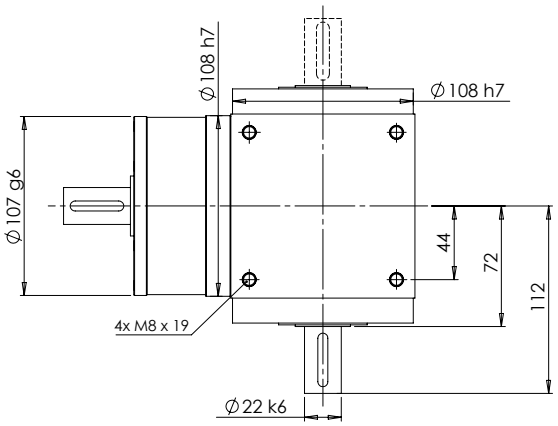
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT110L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of **AT** & **ATB** series are identical

NOTE: Example gearbox shown with S2 shaft option

AT110L = 1 Input, 2 Output
AT110L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT110R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	150	225.0	7.70
1.5:1	150	225.0	6.74
2:1	150	225.0	6.31
3:1	120	180.0	6.17
4:1	100	150.0	6.13
5:1	85	127.5	6.12
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	4500
Max. Axial Load on Input (N)*	1050
Max. Axial Load on Output (N)*	1350
Max. Radial Load on Input (N)*	2100
Max. Radial Load on Output (N)*	2700
Efficiency (%)	≥ 98
Unit weight (kg)	11.6
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 76

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

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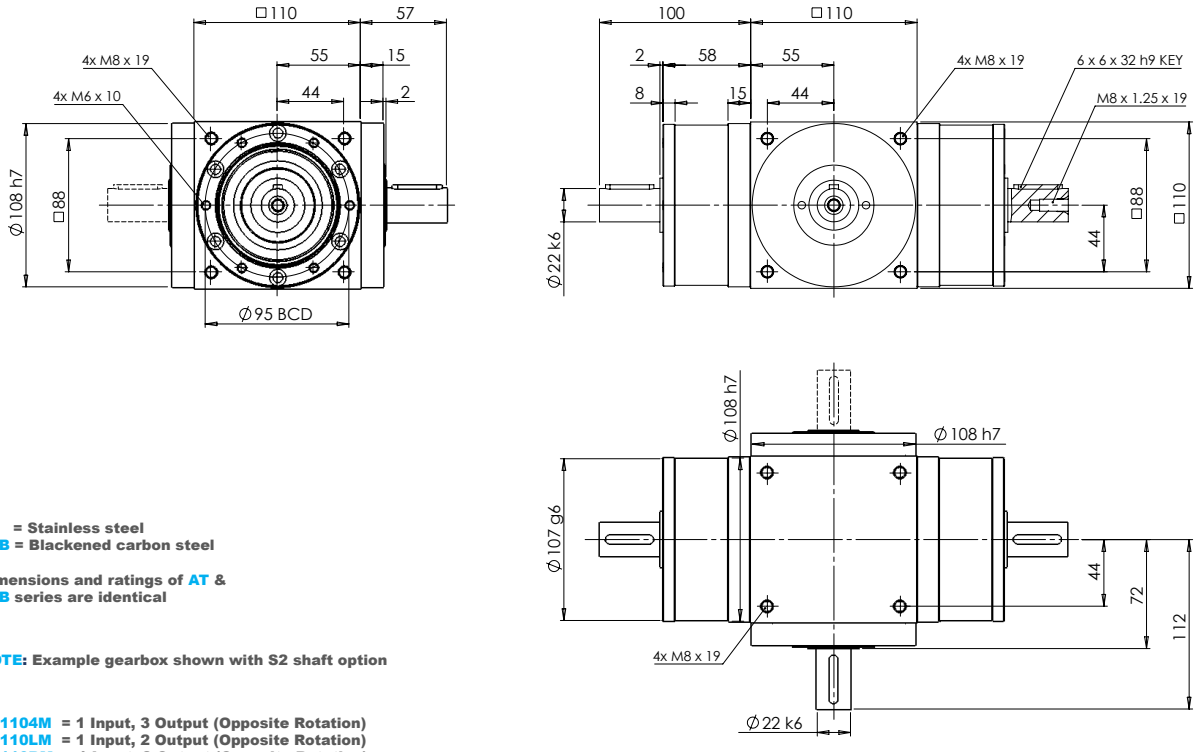
AT110M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT1104M = 1 Input, 3 Output (Opposite Rotation)
AT110LM = 1 Input, 2 Output (Opposite Rotation)
AT110RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	150	225.0	7.70
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	4500
Max. Axial Load on Input (N)*	1050
Max. Axial Load on Output (N)*	1350
Max. Radial Load on Input (N)*	2100
Max. Radial Load on Output (N)*	2700
Efficiency (%)	≥ 98
Unit weight (kg)	15.4
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 76

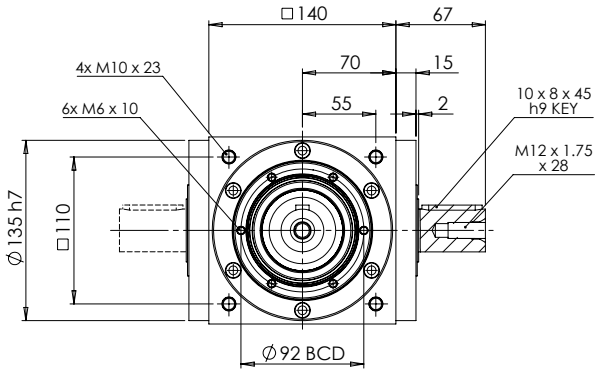
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

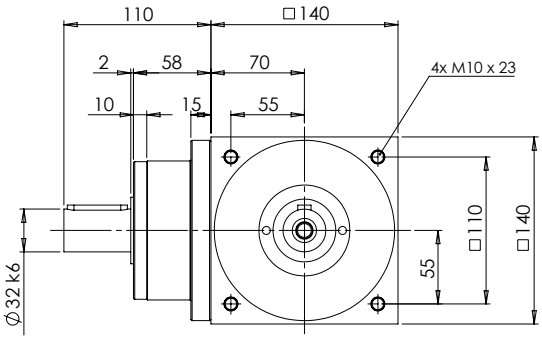
Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

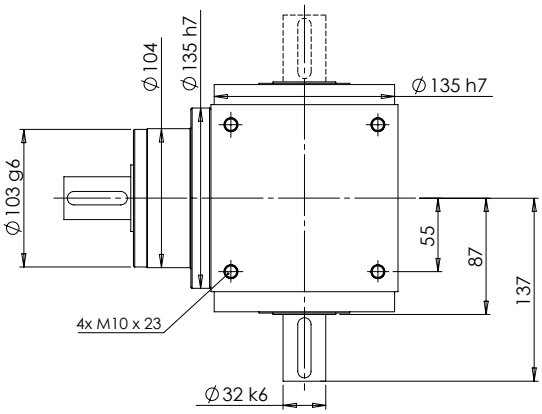
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT140L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT140L = 1 Input, 2 Output
AT140L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT140R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	360	540.0	23.57
1.5:1	360	540.0	19.37
2:1	330	495.0	17.75
3:1	270	405.0	17.18
4:1	224	336.0	17.06
5:1	196	294.0	17.02
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	3500
Max. Axial Load on Input (N)*	1350
Max. Axial Load on Output (N)*	2400
Max. Radial Load on Input (N)*	2700
Max. Radial Load on Output (N)*	4800
Efficiency (%)	≥ 98
Unit weight (kg)	19.8
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 77

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

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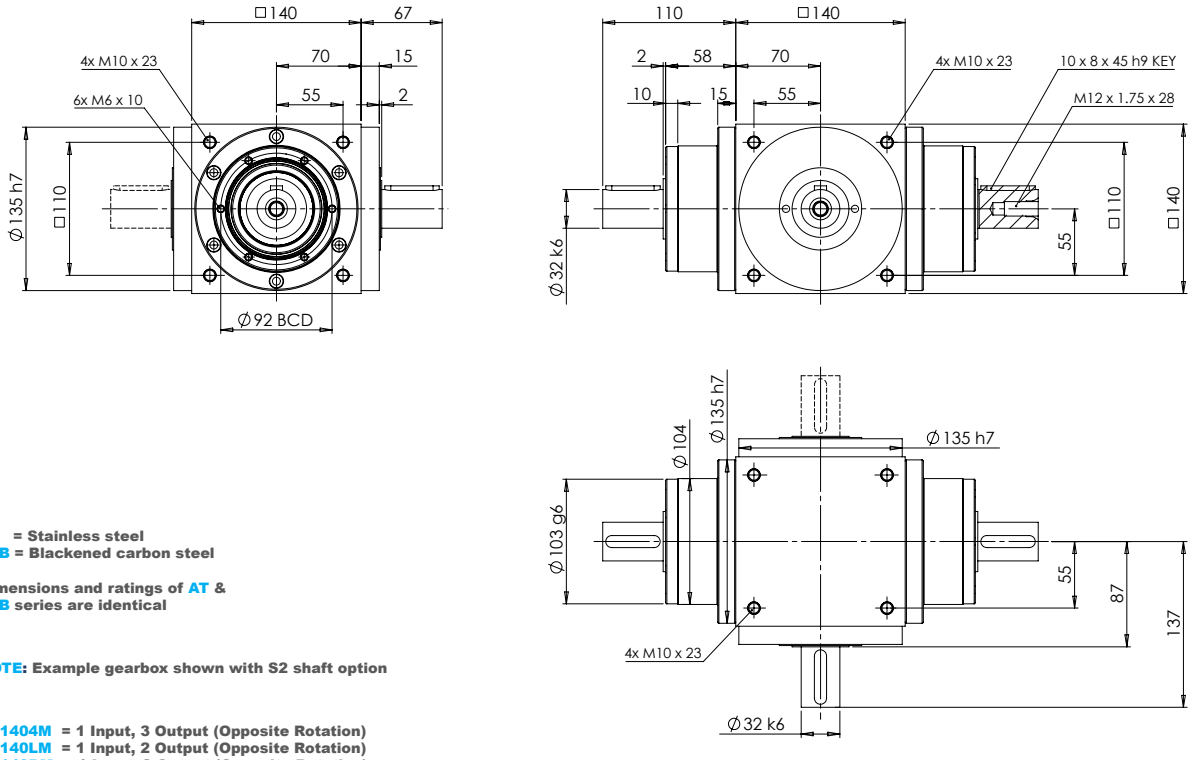
AT140M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT1404M = 1 Input, 3 Output (Opposite Rotation)
AT140LM = 1 Input, 2 Output (Opposite Rotation)
AT140RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	360	540.0	23.57
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	3500
Max. Axial Load on Input (N)*	1350
Max. Axial Load on Output (N)*	2400
Max. Radial Load on Input (N)*	2700
Max. Radial Load on Output (N)*	4800
Efficiency (%)	≥ 98
Unit weight (kg)	24.8
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 77

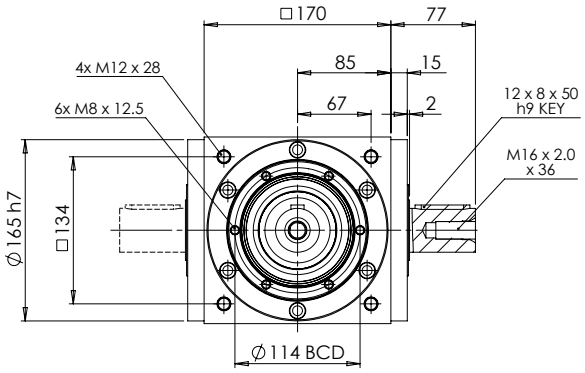
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

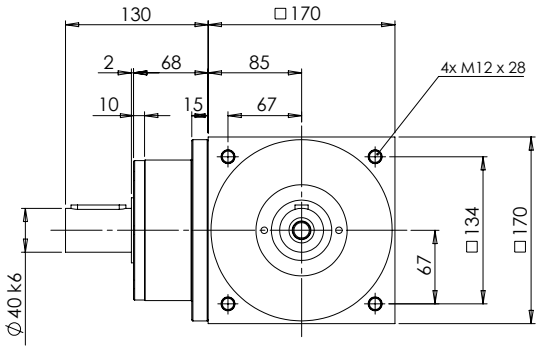
Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

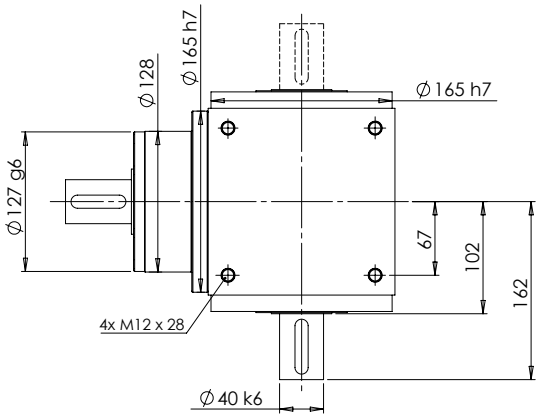
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT170L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of **AT** & **ATB** series are identical

NOTE: Example gearbox shown with S2 shaft option

AT170L = 1 Input, 2 Output
AT170L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT170R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	585	877.5	58.99
1.5:1	585	877.5	49.28
2:1	544	816.0	45.35
3:1	450	675.0	44.01
4:1	376	564.0	43.70
5:1	320	480.0	43.60
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	3000
Max. Axial Load on Input (N)*	1900
Max. Axial Load on Output (N)*	3300
Max. Radial Load on Input (N)*	3800
Max. Radial Load on Output (N)*	6600
Efficiency (%)	≥ 98
Unit weight (kg)	34.8
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 78

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

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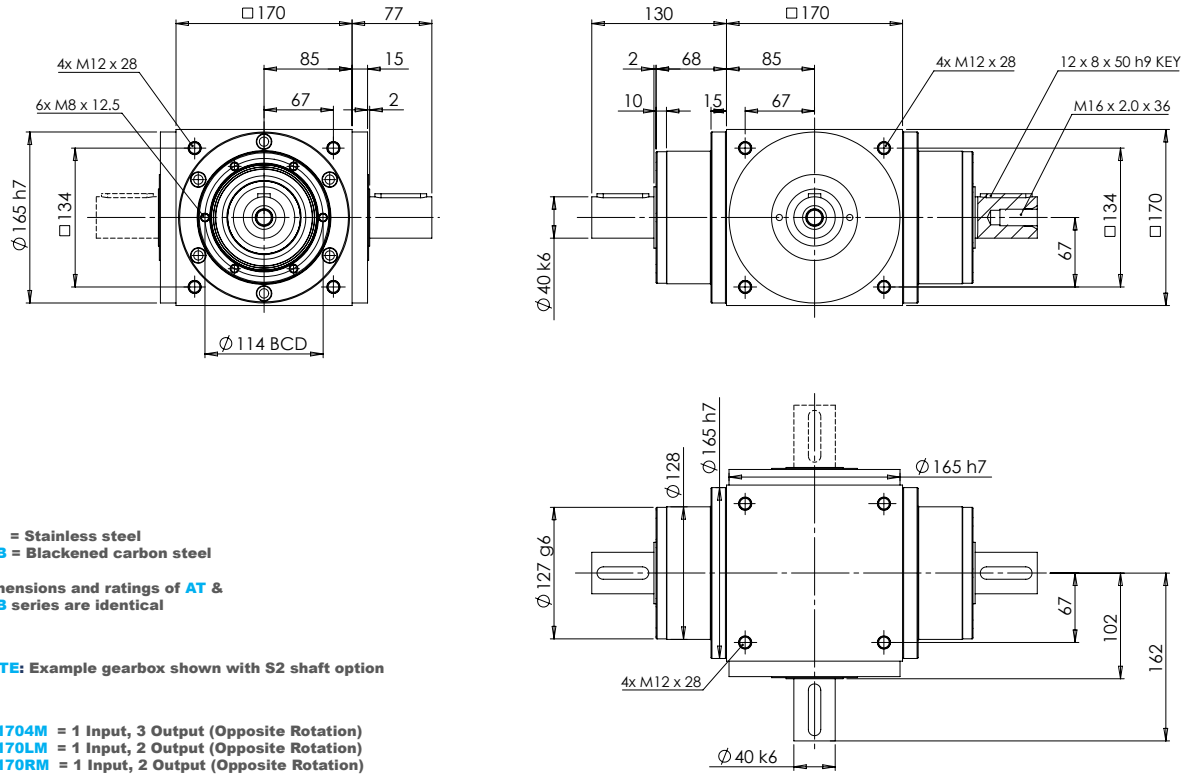
AT170M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT1704M = 1 Input, 3 Output (Opposite Rotation)
AT170LM = 1 Input, 2 Output (Opposite Rotation)
AT170RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	585	877.5	58.99
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	3000
Max. Axial Load on Input (N)*	1900
Max. Axial Load on Output (N)*	3300
Max. Radial Load on Input (N)*	3800
Max. Radial Load on Output (N)*	6600
Efficiency (%)	≥ 98
Unit weight (kg)	42.6
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 78

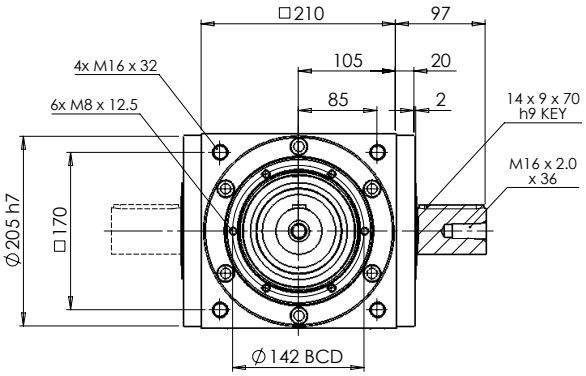
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

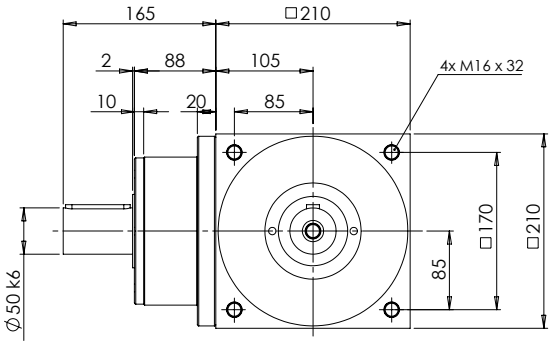
Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

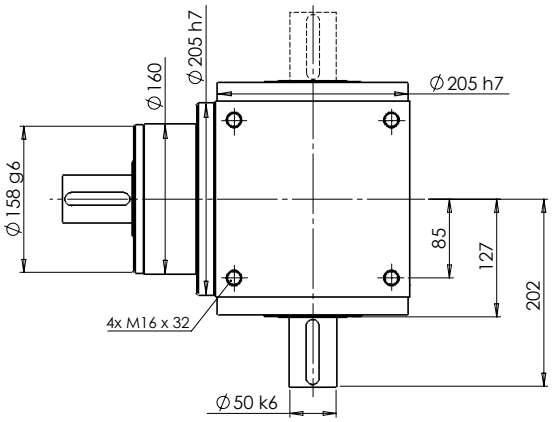
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT210L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of **AT** & **ATB** series are identical

NOTE: Example gearbox shown with S2 shaft option

AT210L = 1 Input, 2 Output
AT210L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT210R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	1300	1950.0	195.40
1.5:1	1300	1950.0	155.45
2:1	1220	1830.0	140.24
3:1	1020	1530.0	134.95
4:1	860	1290.0	133.58
5:1	740	1110.0	133.14
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	2200
Max. Axial Load on Input (N)*	3900
Max. Axial Load on Output (N)*	5750
Max. Radial Load on Input (N)*	7800
Max. Radial Load on Output (N)*	11500
Efficiency (%)	≥ 98
Unit weight (kg)	66.2
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 80

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

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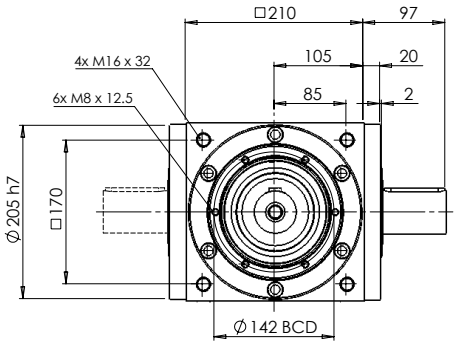
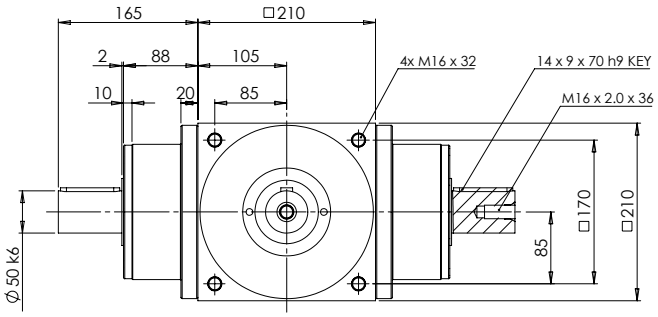
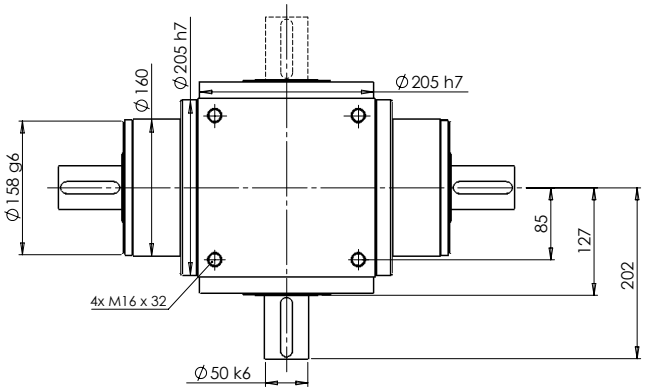
AT210M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT2104M = 1 Input, 3 Output (Opposite Rotation)
AT210LM = 1 Input, 2 Output (Opposite Rotation)
AT210RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	1300	1950.0	195.40
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	2200
Max. Axial Load on Input (N)*	3900
Max. Axial Load on Output (N)*	5750
Max. Radial Load on Input (N)*	7800
Max. Radial Load on Output (N)*	11500
Efficiency (%)	≥ 98
Unit weight (kg)	82.5
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 80

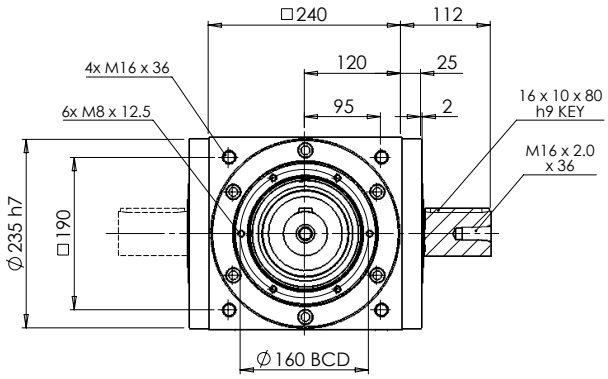
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

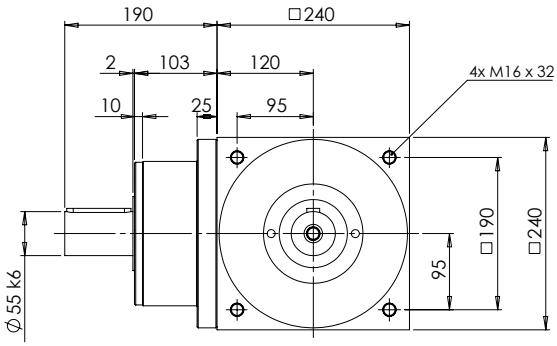
Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

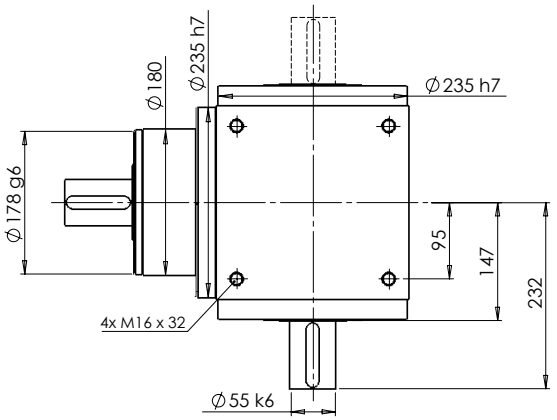
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT240L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of **AT** & **ATB** series are identical

NOTE: Example gearbox shown with S2 shaft option

AT240L = 1 Input, 2 Output
AT240L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT240R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	2150	3225.0	369.34
1.5:1	2150	3225.0	283.58
2:1	2010	3015.0	249.74
3:1	1650	2475.0	237.71
4:1	1410	2115.0	234.72
5:1	1210	1815.0	233.67
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	2000
Max. Axial Load on Input (N)*	4800
Max. Axial Load on Output (N)*	8500
Max. Radial Load on Input (N)*	9600
Max. Radial Load on Output (N)*	16000
Efficiency (%)	≥ 98
Unit weight (kg)	98.1
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 82

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

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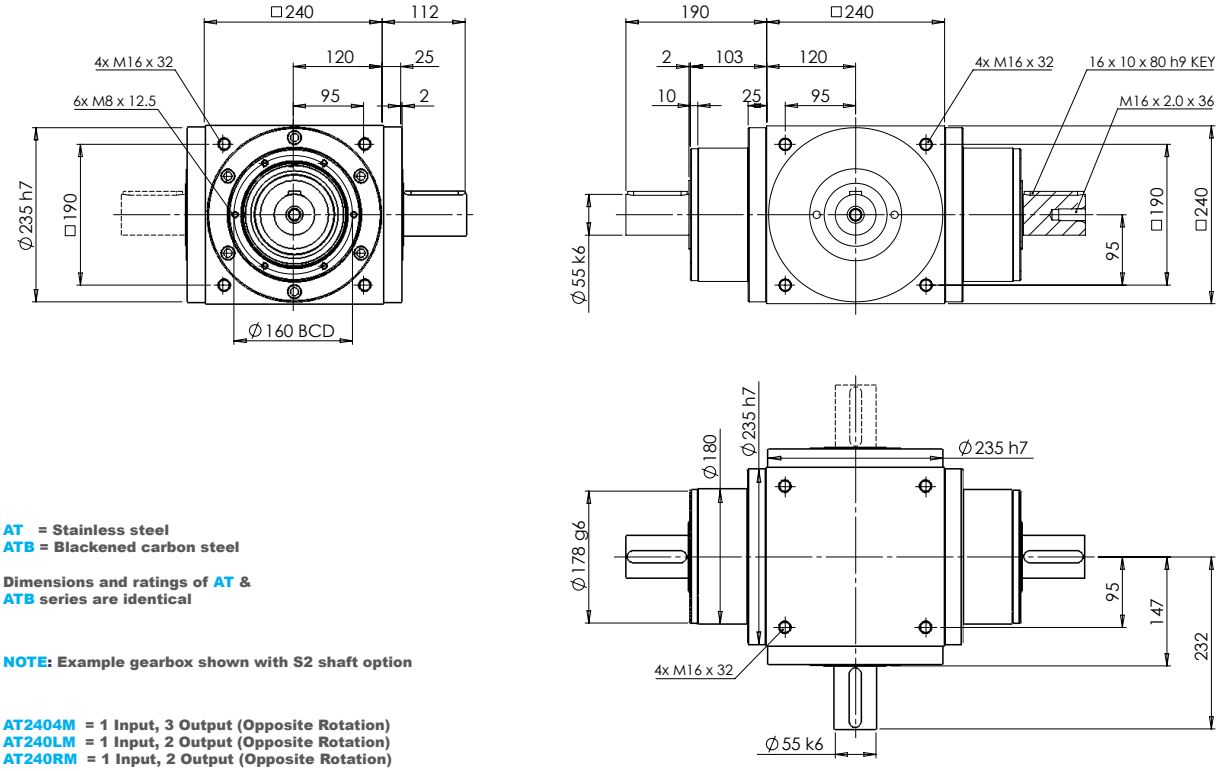
AT240M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT2404M = 1 Input, 3 Output (Opposite Rotation)
AT240LM = 1 Input, 2 Output (Opposite Rotation)
AT240RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	2150	3225.0	369.34
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	2000
Max. Axial Load on Input (N)*	4800
Max. Axial Load on Output (N)*	8500
Max. Radial Load on Input (N)*	9600
Max. Radial Load on Output (N)*	16000
Efficiency (%)	≥ 98
Unit weight (kg)	123.5
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 82

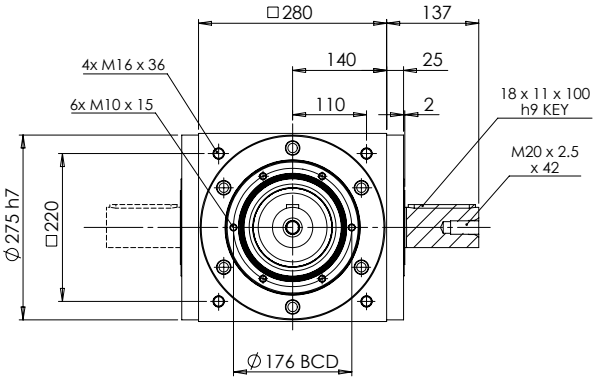
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

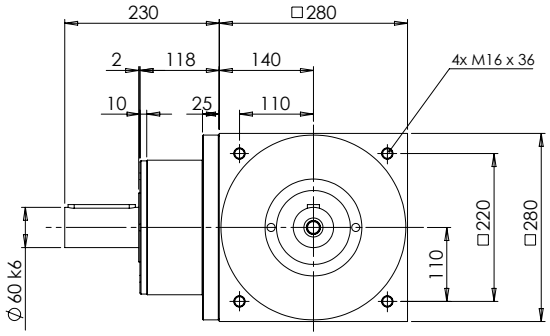
Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

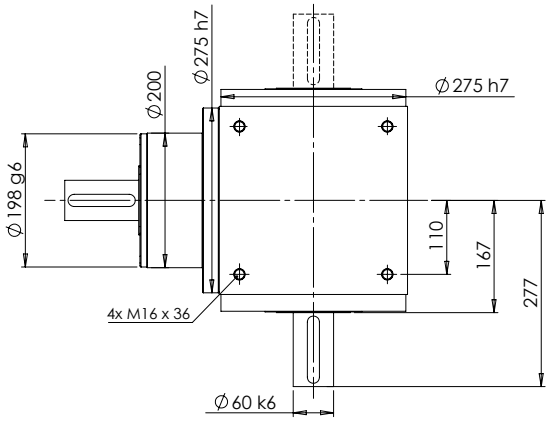
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

AT280L – Shaft Series
Spiral Bevel Range – Stainless or Steel







AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT280L = 1 Input, 2 Output
AT280L1 = 1 Input, 1 Output (Clockwise / Anti-clockwise)
AT280R1 = 1 Input, 1 Output (Clockwise / Clockwise)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	3200	4800.0	799.12
1.5:1	3200	4800.0	595.78
2:1	3050	4575.0	511.76
3:1	2850	4275.0	483.06
4:1	2300	3450.0	476.26
5:1	2000	3000.0	473.58
~ DOUBLE / TRIPLE STAGE ~			
PLEASE SEE FLANGED SERIES FOR LARGER REDUCTION RATIOS			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	1700
Max. Axial Load on Input (N)*	5250
Max. Axial Load on Output (N)*	9000
Max. Radial Load on Input (N)*	10500
Max. Radial Load on Output (N)*	18000
Efficiency (%)	≥ 98
Unit weight (kg)	155.7
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 83

* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

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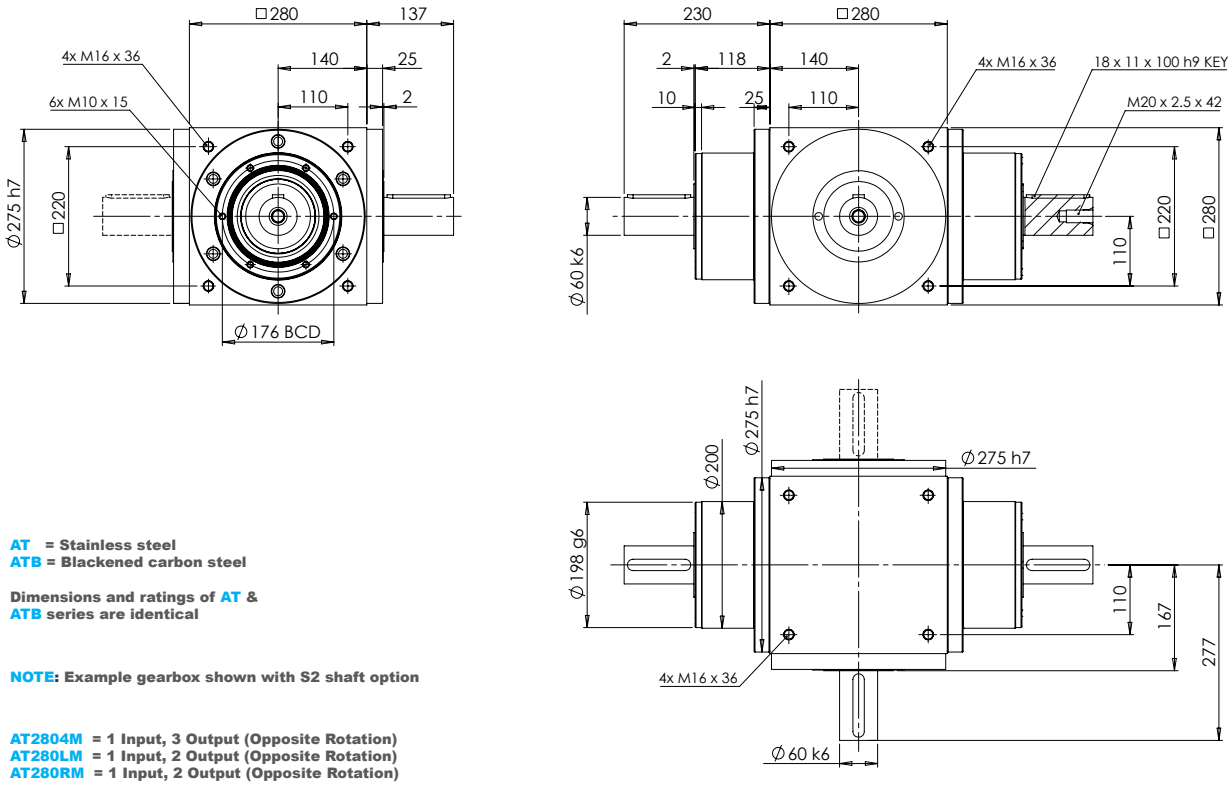
AT280M – Opposite Rotation
Spiral Bevel Range – Stainless or Steel



AT = Stainless steel
ATB = Blackened carbon steel

Dimensions and ratings of AT & ATB series are identical

NOTE: Example gearbox shown with S2 shaft option

AT2804M = 1 Input, 3 Output (Opposite Rotation)
AT280LM = 1 Input, 2 Output (Opposite Rotation)
AT280RM = 1 Input, 2 Output (Opposite Rotation)

For more information, see rotation directions on page 66

Ratio	Nom. Output Torque (Nm)	Max. Acceleration Torque (Nm)	Mass Moment of Inertia (kg/cm²)
~ SINGLE STAGE ~			
1:1	3200	4800.0	799.12
AT-M SERIES ONLY AVAILABLE IN 1:1 RATIO			

Other Options Available	Order Code
Food Grade Grease	on request
High or Low Temperature Grease	on request

Design Parameter	Value
Nom. Output Speed (rpm)	1500
Max. Input Speed (rpm)	1700
Max. Axial Load on Input (N)*	5250
Max. Axial Load on Output (N)*	9000
Max. Radial Load on Input (N)*	10500
Max. Radial Load on Output (N)*	18000
Efficiency (%)	≥ 98
Unit weight (kg)	193.3
Min. Operating Temperature (°C)	- 10
Max. Operating Temperature (°C)	+ 90
Protection Rating	IP65
Noise (dB)**	≤ 83

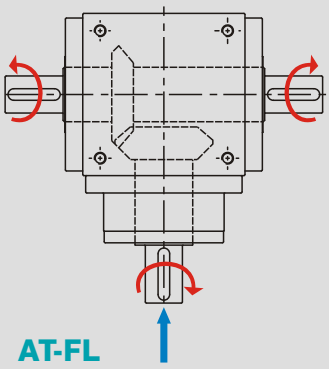
* Applied at centre of in/output shaft (Length/2). For more information, see pages 68 & 69
** Based on 1:1 ratio @ 1500 rpm without load

Backlash
~ SINGLE STAGE ~
≤ 6 arcmin

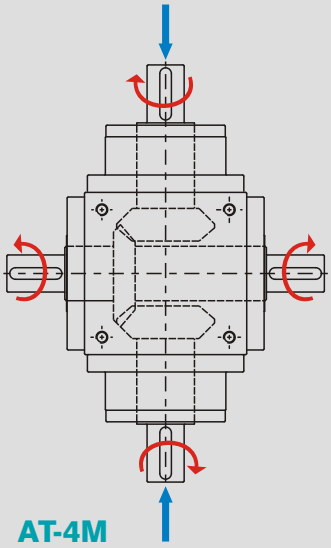
Shaft Option	Order Code
Smooth Shaft	S1
Keyed Shaft	S2

ALL BEVEL GEARBOXES ARE SUPPLIED LUBRICATED FOR LIFE WITH NYE® NYOGEL 792D SYNTHETIC GREASE AND CONFORM WITH ATEX EQUIPMENT-GROUP II CATEGORY 2 AS STANDARD

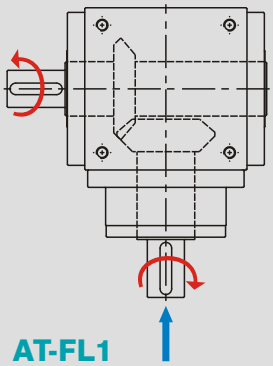
Rotation Directions
For AT Series Spiral Bevel Gearboxes



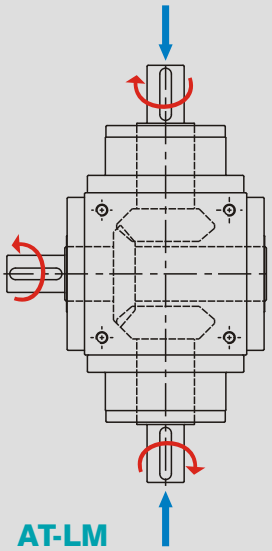
AT-L AT-FL



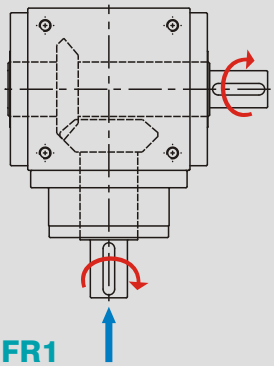
AT-4M



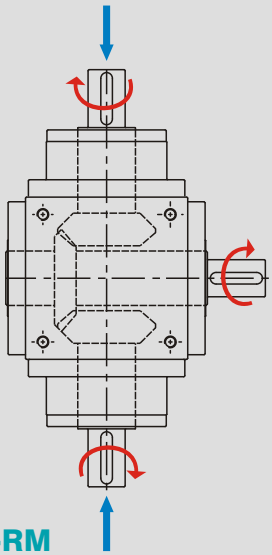
AT-L1 AT-FL1



AT-LM



AT-R1 AT-FR1



AT-RM

PLEASE NOTE THAT ALL WMH SPIRAL BEVEL GEARBOXES ARE REDUCTION UNITS
AND ARE INTENDED TO BE USED AS SUCH AS INPUTS HAVE LARGER BEARINGS

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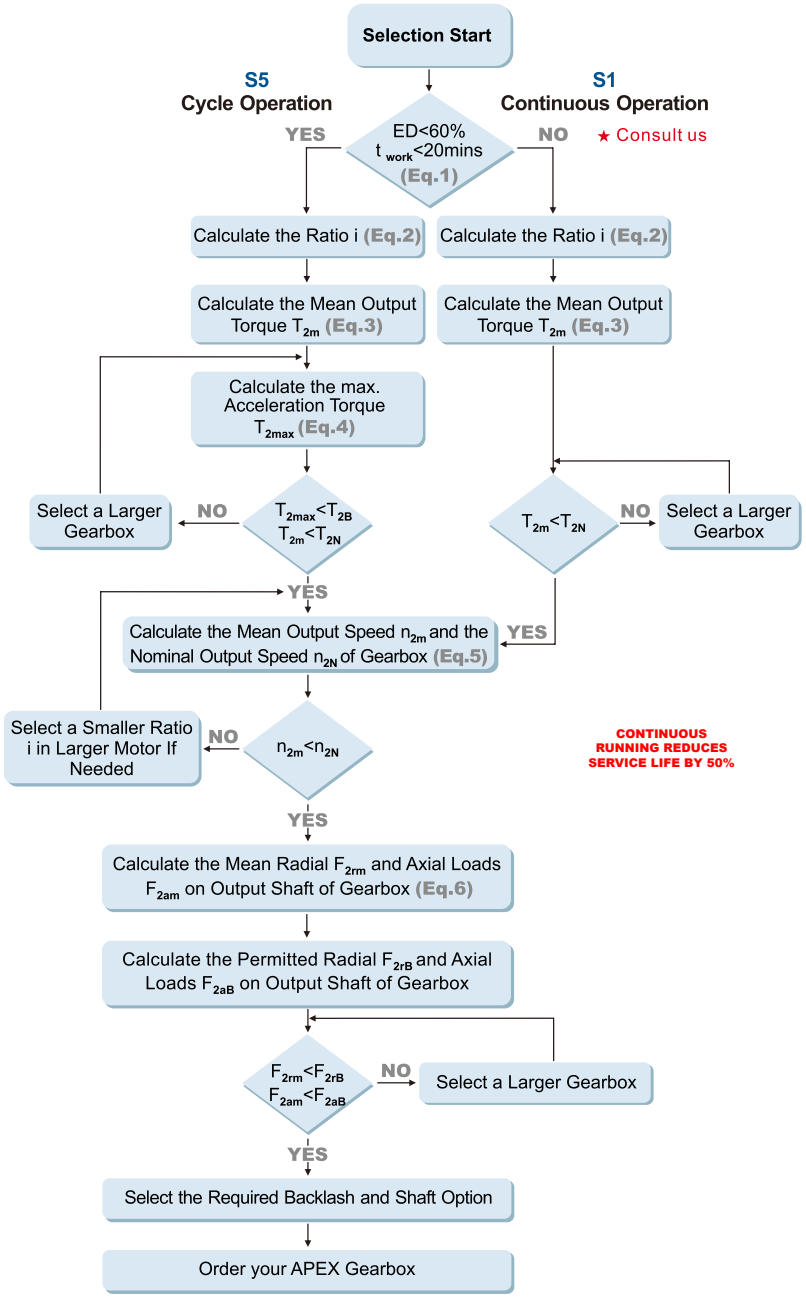
AT Selection

Selection of the Optimum Gearbox



Recommended (for S5 Cycle Operation)

The general design is given for

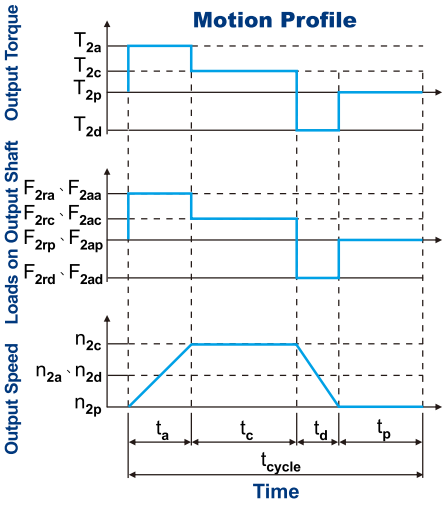
$\frac{J_L}{i^2} \leq 4 \times J_m$

The optimal design is given for

$\frac{J_L}{i^2} \cong J_m$

J_L Load Inertia

J_m Motor Inertia



1. $ED = \frac{t_a + t_c + t_d}{t_{cycle}} \times 100\%$, $t_{work} = t_a + t_c + t_d$

Index : a. Acceleration, c. Constant, d. Deceleration, p. Pause **(Eq.1)**

2. $i \cong \frac{n_m}{n_{work}}$

n_m Output Speed of the Motor

n_{work} Working Speed **(Eq.2)**

3. $T_{2m} = \sqrt[3]{\frac{n_{2a} \times t_a \times T_{2a}^{\ 3} + n_{2c} \times t_c \times T_{2c}^{\ 3} + n_{2d} \times t_d \times T_{2d}^{\ 3}}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$ **(Eq.3)**

4. $T_{2max} = T_{mB} \times i \times k_s \times \eta$

where K_s is

K_s	No. of Cycles / hr
1.0	0 ~ 1,000
1.1	1,000 ~ 1,500
1.3	1,500 ~ 2,000
1.6	2,000 ~ 3,000
1.8	3,000 ~ 5,000

T_{mB} Max. Output Torque of the Motor

η Efficiency of the Gearbox **(Eq.4)**

5. $n_{2a} = n_{2d} = \frac{1}{2} \times n_{2c}$

$n_{2m} = \frac{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}{t_a + t_c + t_d}$

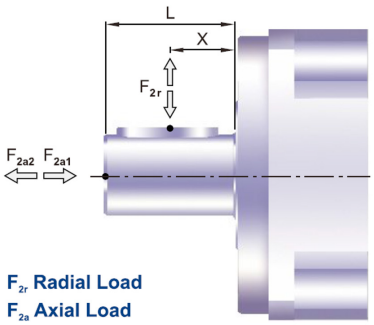
$n_{2N} = \frac{n_{1N}}{i}$ **(Eq.5)**

6. $F_{2rm} = \sqrt[3]{\frac{n_{2a} \times t_a \times F_{2ra}^{\ 3} + n_{2c} \times t_c \times F_{2rc}^{\ 3} + n_{2d} \times t_d \times F_{2rd}^{\ 3}}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$

$F_{2am} = \sqrt[3]{\frac{n_{2a} \times t_a \times F_{2aa}^{\ 3} + n_{2c} \times t_c \times F_{2ac}^{\ 3} + n_{2d} \times t_d \times F_{2ad}^{\ 3}}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$ **(Eq.6)**

FOR TECHNICAL SUPPORT OR QUERIES PLEASE CONTACT OUR SALES TEAM

AT Input Loads

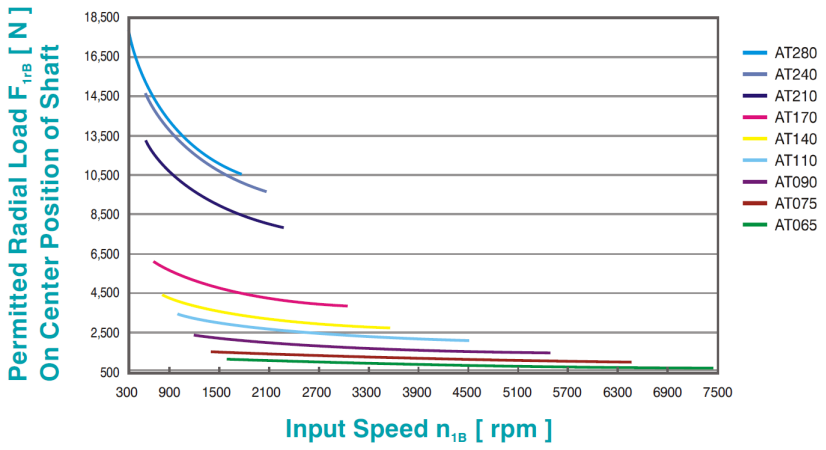


F_{2r} Radial Load
F_{2a} Axial Load

The permitted radial and axial loads on the input shaft of the gearbox are dependant on the design of the input bearing arrangement.

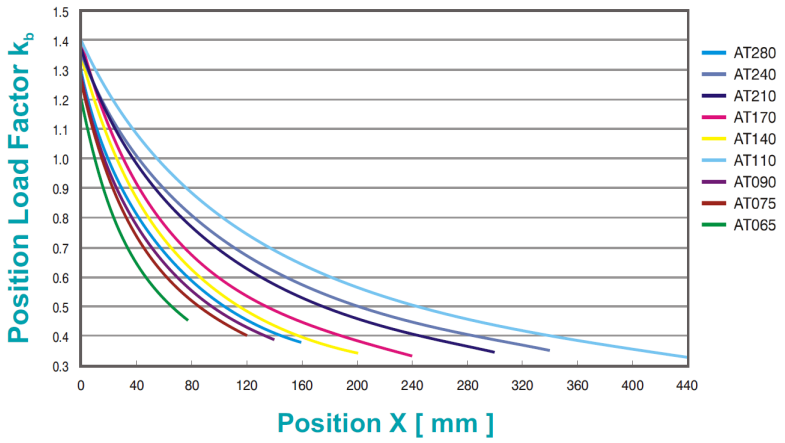
WMH use the extension straddle oversized tapered roller bearing design for the AT series thus allowing for heavy loads on both axis.

Permitted radial loads are dependant on the nominal input speed of the gearbox as can be seen on the below graph.



CONTINUOUS RUNNING REDUCES SERVICE LIFE BY 50%

If the radial force is not exerted on the centre of the input shaft (length/2) then the permitted loads can be calculated based on the position load factor as depicted on the below graph.



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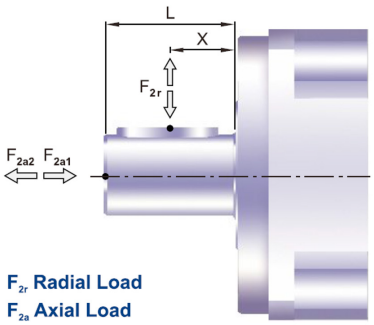
AT Output Loads

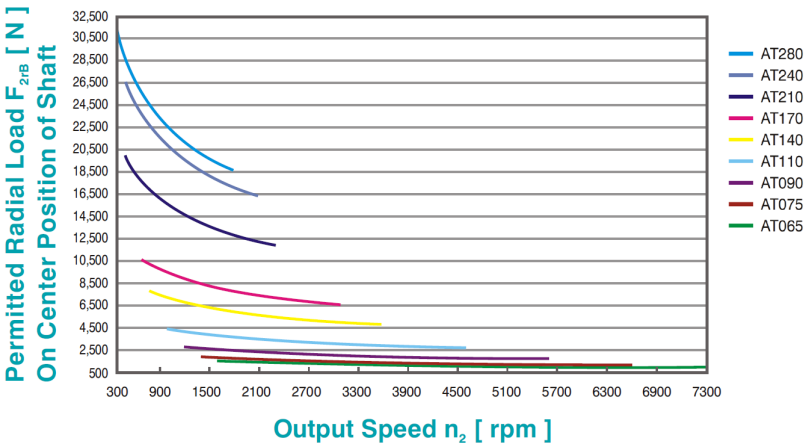


F_{2r} Radial Load
F_{2a} Axial Load

The permitted radial and axial loads on the output shaft of the gearbox are dependant on the design of the output bearing arrangement.

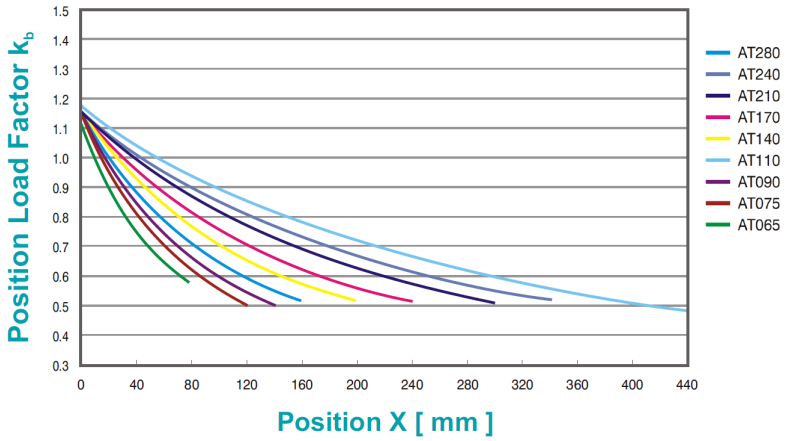
WMH use the extension straddle oversized tapered roller bearing design for the AT series thus allowing for heavy loads on both axis.

Permitted radial loads are dependant on the nominal output speed of the gearbox as can be seen on the below graph.



CONTINUOUS RUNNING REDUCES SERVICE LIFE BY 50%

If the radial force is not exerted on the centre of the output shaft (length/2) then the permitted loads can be calculated based on the position load factor as depicted on the below graph.



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AT Order Codes
Shaft Input Type

AT B 110 L - 001 - S2

Shaft options

S2 = Shafts with keys
S1 = Smooth shafts

Gearbox Ratio

(omit if LM, RM or 4M series)

Gearbox output style

L = Shaft series, 2 outputs
L1 = Shaft series, 1 output
R1 = Shaft series, 1 output
LM = Opp rotation, 2 outputs
RM = Opp rotation, 2 outputs
4M = Opp rotation, 2 in 2 out
H * = Hollow output series *
C * = Clamp output series *

Gearbox frame size

Chemically blacked carbon steel construction option

(omit if stainless steel required)

AT series gearbox

Example Order Code: ATB140R1-003-S2

* **Gearboxes with hollow or clamp type outputs also available – please contact our sales team for details**

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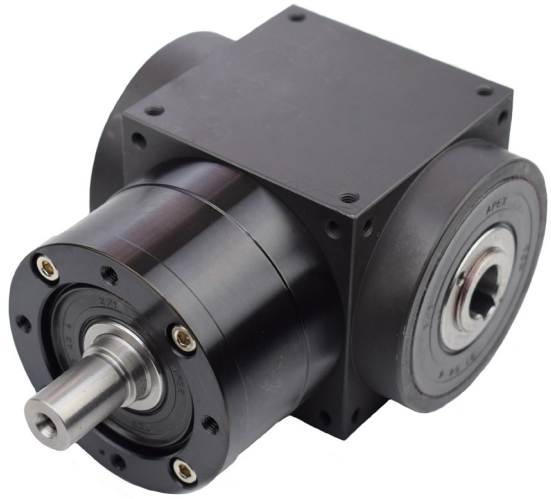
Additional Options
For Bevel Gearboxes

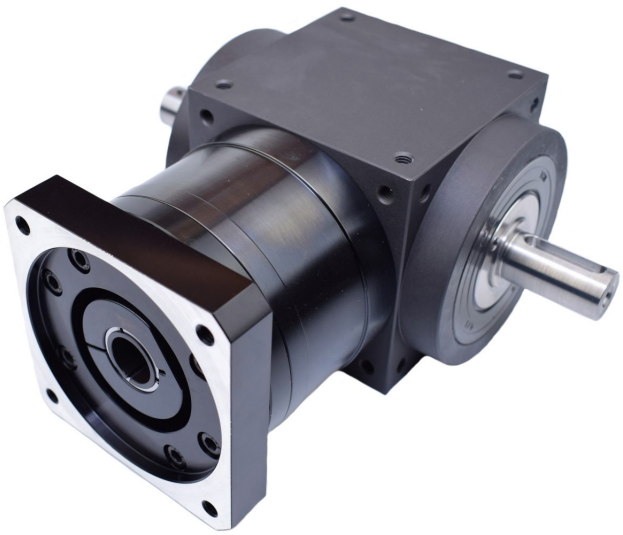


ATH Series

- Hollow through bore and key output
- From Ø13mm up to Ø60mm output bores
- Available in stainless (AT) and steel (ATB)
- Available in all frame sizes

ATC Series

- Hollow through bore with shrink disc outputs
- From Ø13mm up to Ø60mm output bores
- Available in stainless (AT) and steel (ATB)
- Available in all frame sizes



AT-F Series

- Motor mounting flange and clamp coupling input
- Reduction ratios up to 500:1 available
- Available in stainless (AT) and steel (ATB)
- Available in all frame sizes in all output options*

* Excluding LM, RM & 4M opposite rotation series

THIS CATALOGUE DOES NOT SHOW THE FULL RANGE OF GEARBOXES AVAILABLE FROM WMH
PLEASE SEE OUR PRECISION GEARBOXES STOCK CATALOGUE FOR MORE DETAILS

AT-F Order Codes
With Motor Adapter

AT B 110 F L M1 - 010 - S2 / MOTOR

- **AT** — AT series gearbox
- **B** — Chemically blacked carbon steel construction option
  (omit if stainless steel required)
- **110** — Gearbox frame size
- **F** — For motor mounting
  (includes motor adapter)
- **L** — Gearbox output style
  L = Shaft series, 2 outputs
  L1 = Shaft series, 1 output
  R1 = Shaft series, 1 output
  H* = Hollow output series *
  C* = Clamp output series *
- **M1** — Enlarged input geometry option
  (see below – omit if standard)
- **010** — Gearbox Ratio
- **S2** — Output shaft option
  S2 = Output shafts with keys
  S1 = Smooth output shafts
  (omit if C or H series)
- **MOTOR** — Motor brand and model number

Example Order Code: ATB140FL-001-S2 / ALLEN BRADLEY MPL-A230P

* Gearboxes with hollow or clamp type outputs also available – please contact our sales team for details

AT-F Max. ØC3	065		075		090		110			140			170			210			240			280		
	1 STG	2 STG	1 STG	2 STG	1 STG	2 STG	1 STG	2 STG	3 STG	1 STG	2 STG	3 STG	1 STG	2 STG	3 STG	1 STG	2 STG	3 STG	1 STG	2 STG	3 STG	1 STG	2 STG	3 STG
Standard	11	12	14	12	19	16	24	24	12	32	24	12	38	24	16	42	32	16	48	38	24	55	38	24
M1	12	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M2	-	-	5/8"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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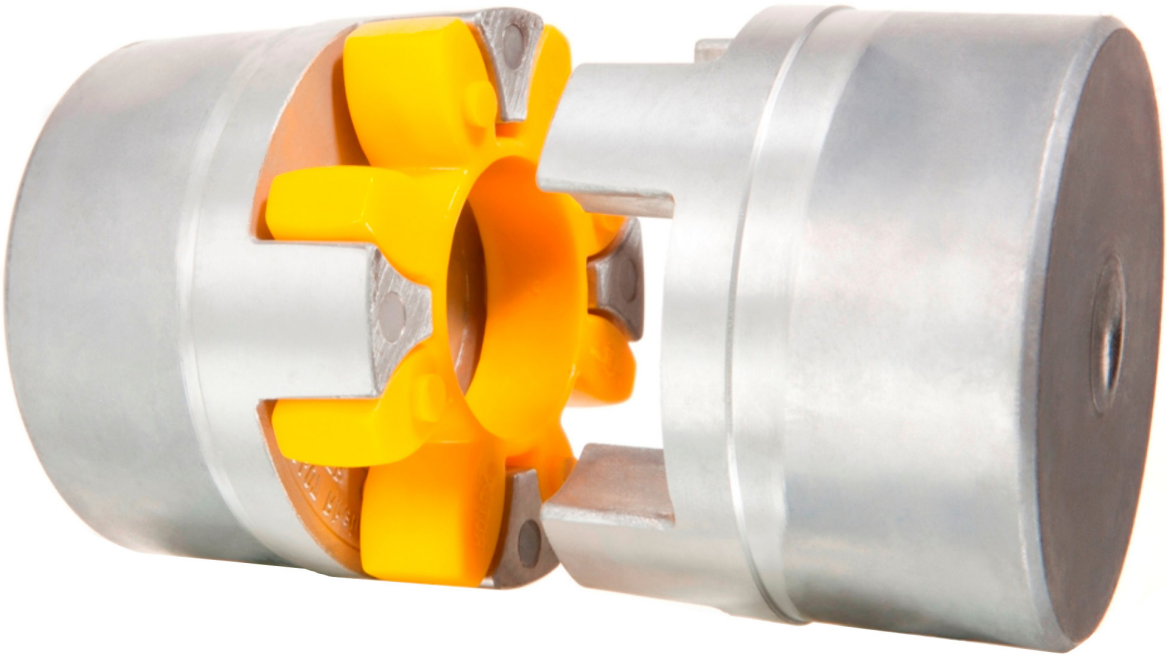
Couplings & Cardan Shafts



Connection Elements

WMH offers a range of flexible spider element type couplings from stock. The impact and vibration absorbing effect of flexible couplings helps to protect bevel gearboxes, screw jacks, motors or any other mating components from damage. Their flexible nature also allows for a small degree of axial, radial and angular misalignment between components that, even with todays production standards, is unavoidable.

WMH also produces cardan connecting shafts from standard couplings. These are used to synchronously link two or more gearboxes together with the same axial, radial and angular misalignment compensation properties as flexible couplings. Cardan shafts can be produced in almost any length (depending on tube availability) and can be used with pillow blocks to achieve much higher rotational operating speeds.

WMH couplings and cardan shafts can be supplied with either solid jaw type hubs or slotted clamping type hubs with either standard or backlash free elements. Couplings are stocked un-bored but, upon request, can be bored and keyed in-house on our broaching machine to suit almost any size.

THIS IS NOT THE FULL RANGE OF COUPLINGS OFFERED BY WMH TRANSMISSIONS LTD
PLEASE SEE OUR FULL POWER TRANSMISSIONS STOCK CATALOGUE FOR MORE DETAILS

Flexible Couplings

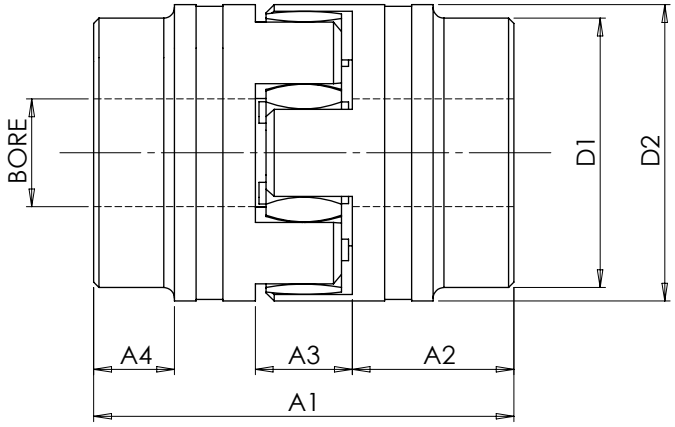
JAW TYPE

CLAMP TYPE

Spider Option	Shore Hardness
Lilac (Red*)	95 / 98 sh-A **
Orange (Yellow*)	92 sh-A
Green (White*)	64 sh-D

* Colours in brackets are for backlash free elements

** Lilac / Red 98 sh-A elements supplied as standard. From size 65 onwards 95 sh-A rated



Size	Nominal * Torque (Nm)	Max rpm *	A1 **	A2 **	A3	A4 **	D1 **	D2	Hub Form	Max Bore
14	12	15900	35	11	13	-	30	30	1a	16 (16)
19	17	11900	66	25	16	-	40	40	1a	25 (24)
24	60	8650	78	30	18	-	55	55	1a	35 (28)
28	160	7350	90	35	20	-	65	65	1a	40 (38)
38	325	5950	114	45	24	27 (-)	70 (80)	80	1 (1a)	48 (45)
42	450	5000	126	50	26	28	85	95	1	55 (50)
48	525	4550	140	56	28	32	95	105	1	62 (55)
55	685	3950	160	65	30	37	110	120	1	74 (68)
65	940	3500	185	75	35	47	115	135	1	80 (70)
75	1920	2950	210	85	40	53	135	160	1	95 (80)
90	3600	2380	245	100	45	62	160	200	1	110 (90)

* Applies to standard 95 / 98 Shore-A elements only
Please contact us for different shore options.

** Longer hubs (type 1b) available on request

NOTE: Standard elements -50°C / +120°C. Backlash free elements -30°C / +90°C

NOTE: Values in brackets are for backlash free couplings

Size	Standard Jaw Type		Standard Clamp Type		Backlash Free Jaw Type		Backlash Free Clamp Type	
14	290-002-030	Steel	292-002-030	Steel	290-003-030	Aluminium	292-003-030	Aluminium
19	290-002-041	Steel	292-002-041	Steel	290-003-041	Aluminium	292-003-041	Aluminium
24	290-002-056	Steel	292-002-056	Steel	290-003-056	Aluminium	292-003-056	Aluminium
28	290-002-067	Steel	292-002-067	Steel	290-003-067	Aluminium	292-003-067	Aluminium
38	290-002-080	Steel	292-002-080	Steel	290-003-077	Aluminium	292-003-077	Aluminium
42	290-002-095	Steel	292-002-095	Steel	290-003-095	Steel	292-003-095	Steel
48	290-002-105	Steel	292-002-105	Steel	290-003-105	Steel	292-003-105	Steel
55	290-002-120	Steel	292-002-120	Steel	290-003-120	Steel	292-003-120	Steel
65	290-002-135	Steel	292-002-135	Steel	290-003-135	Steel	292-003-135	Steel
75	290-002-160	Steel	292-002-160	Steel	290-003-160	Steel	292-003-160	Steel
90	290-002-200	Steel	292-002-200	Steel	290-003-200	Steel	292-003-200	Steel

COUPLING HUBS ARE STOCKED UN-BORED BUT CAN BE BORED & KEYED IN-HOUSE
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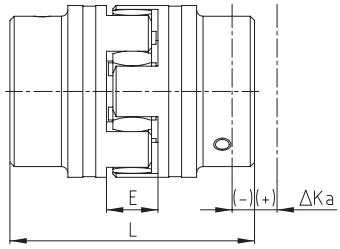
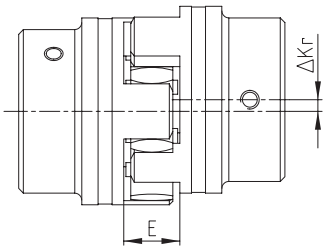
Flexible Couplings

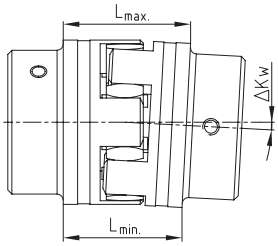
AXIAL DISPLACEMENT ΔKa



RADIAL DISPLACEMENT ΔKr



ANGULAR DISPLACEMENT ΔKw



SHORE-A ELEMENTS (92 / 95 / 98)

Size	ΔKa (mm)	ΔKr (mm)	ΔKw (°)	ΔKw (mm)
14	-0.5 / +1.0	0.17	1.2	0.67
19	-0.5 / +1.2	0.20	1.2	0.82
24	-0.5 / +1.4	0.22	0.9	0.85
28	-0.7 / +1.5	0.25	0.9	1.05
38	-0.7 / +1.8	0.28	1.0	1.35
42	-1.0 / +2.0	0.32	1.0	1.70
48	-1.0 / +2.1	0.36	1.1	2.00
55	-1.0 / +2.2	0.38	1.1	2.30
65	-1.0 / +2.6	0.42	1.2	2.70
75	-1.5 / +3.0	0.48	1.2	3.30
90	-1.5 / +3.4	0.50	1.2	4.30

SHORE-D ELEMENTS (64)

Size	ΔKa (mm)	ΔKr (mm)	ΔKw (°)	ΔKw (mm)
14	-0.5 / +1.0	0.11	1.1	0.57
19	-0.5 / +1.2	0.13	1.1	0.76
24	-0.5 / +1.4	0.15	0.8	0.76
28	-0.7 / +1.5	0.18	0.8	0.90
38	-0.7 / +1.8	0.21	0.9	1.25
42	-1.0 / +2.0	0.23	0.9	1.40
48	-1.0 / +2.1	0.25	1.0	1.80
55	-1.0 / +2.2	0.27	1.0	2.00
65	-1.0 / +2.6	0.30	1.1	2.50
75	-1.5 / +3.0	0.34	1.1	3.00
90	-1.5 / +3.4	0.36	1.1	3.80

The above figures of displacement are standard values taking into account the load of the coupling up to the rated nominal torque and an operating speed of 1500 rpm along with a +30°C ambient temperature.

The displacement figures only apply to singular couplings. If they appear in series, such as in a cardan connecting shaft, they must be limited in proportion. Please refer to data table for cardan shaft applications.

Care should be taken to maintain the distance dimension E accurately in order to allow for axial clearance of the coupling during operation as the spider elements deform under load and expand into the available space.

Size	Transmittable Friction Torques (Nm) vs Bore Diameter For Clamp Type Hubs Without Keyway																									
	10	11	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70	75	80
14	5	5	6	6	6																						
19	27	27	29	30	31	32	32	34	30	32																	
24	34	35	36	38	38	39	40	41	42	43	45	46															
28			80	81	81	84	85	87	89	91	92	97	99	102	105	109											
38				92	94	97	98	99	102	104	105	109	112	113	118	122	123	126	130								
42								232	238	244	246	255	260	266	274	283	288	294	301	309	315						
48											393	405	413	421	434	445	454	462	473	486	494	514					
55														473	486	498	507	514	526	539	547	567	587	608			
65															507	518	526	535	547	559	567	587	608	627	648		
75																		1102	1124	1148	1163	1201	1239	1278	1316	1354	1393
90																		1944	1980	2016	2040	2100	2160	2220	2280	2340	2400

COUPLING HUBS ARE STOCKED UN-BORED BUT CAN BE BORED & KEYED IN-HOUSE
PLEASE CONTACT OUR INTERNAL SALES TEAM WITH YOUR SPECIFIC REQUIREMENTS

Cardan Connecting Shafts

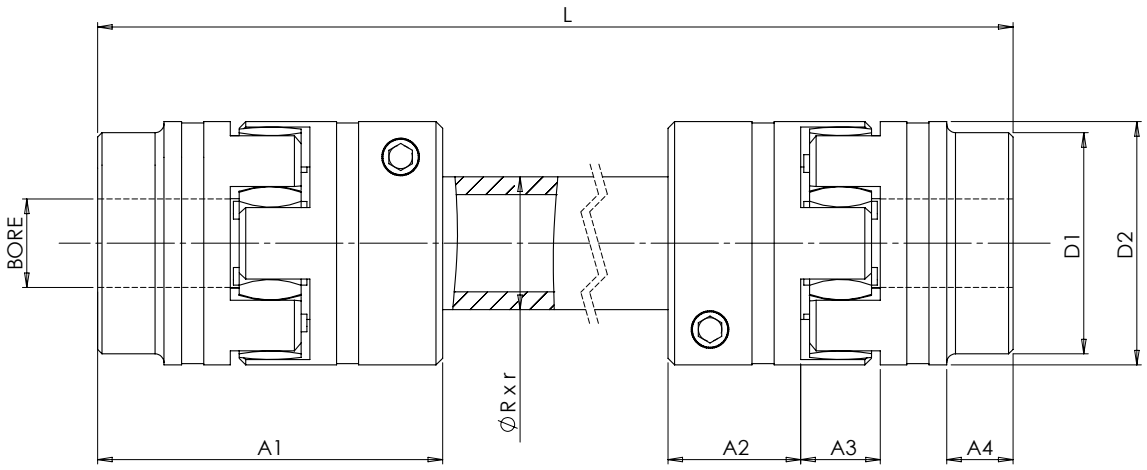
JAW TYPE

CLAMP TYPE

Spider Option	Shore Hardness
Lilac (Red*)	95 / 98 sh-A **
Orange (Yellow*)	92 sh-A
Green (White*)	64 sh-D

* Colours in brackets are for backlash free elements

** Lilac / Red 98 sh-A elements supplied as standard. From size 65 onwards 95 sh-A rated



Size	Ø R	Ø r	A1 *	A2 *	A3	A4 *	D1 *	D2	Hub Form	Max Bore
14	14	2	35	11	13	-	30	30	1a	16 (16)
19	20	3	66	25	16	-	40	40	1a	25 (24)
24	30	4	78	30	18	-	55	55	1a	35 (28)
28	35	4	90	35	20	-	65	65	1a	40 (38)
38	40	4	114	45	24	27 (-)	70 (80)	80	1 (1a)	48 (45)
42	45	4	126	50	26	28	85	95	1	55 (50)
48	50	4	140	56	28	32	95	105	1	62 (55)
55	ON REQUEST									
65										
75										
90										

* Longer hubs (type 1b) available on request

NOTE: Standard elements -50°C / +120°C. Backlash free elements -30°C / +90°C

NOTE: Values in brackets are for backlash free couplings

Size	Nominal * Torque (Nm)	Axial Displacement (mm)	Angular Displacement	Un-bored Hub Inertia (kgm²)	1m Tube Inertia (kgm²)	Un-bored Hub Weight (kg)	1m Tube Weight (kg)	Suitable Pillow Block
14	6	1.0	0.9°	0.066x10-4	0.218x10-4	0.05	0.30	-
19	24	1.2	0.9°	0.414x10-4	0.932x10-4	0.15	0.65	SN 505
24	30	1.4	0.9°	4.415x10-4	4.414x10-4	0.75	1.00	SN 507
28	70	1.5	0.9°	10.025x10-4	7.431x10-4	1.35	1.55	SN 508
38	130	1.8	1.0°	10.075x10-4	11.590x10-4	1.50	1.80	SN 509
42	150	2.0	1.0°	23.930x10-4	17.070x10-4	2.50	2.05	SN 510
48	245	2.1	1.1°	37.340x10-4	24.060x10-4	3.25	2.30	SN 511
55	ON REQUEST							
65								
75								
90								

* These ratings apply to 95 / 98 sh-A elements with light impacts
If impacts are heavy, a factor of 1.4 must be applied.

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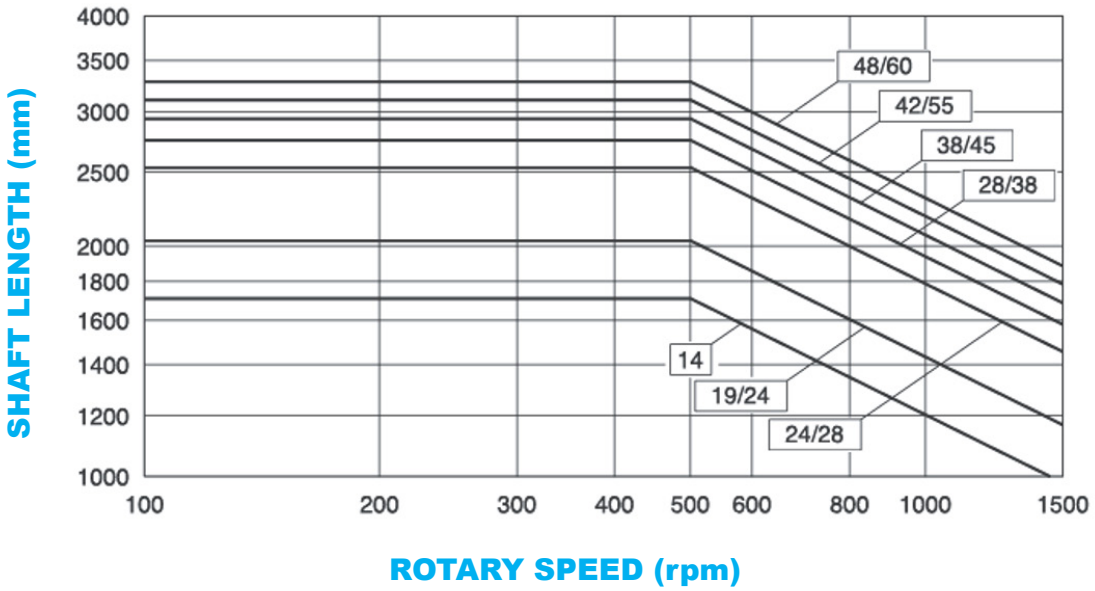
Cardan Connecting Shafts

SPEED-LENGTH GRAPH FOR STANDARD CARDAN SHAFTS WITH 95/98 SH-A ELEMENTS AND UNSUPPORTED HOLLOW TUBE



NOTE: Higher rotational speeds can be achieved via the use of support bearings

29 0 - 00 2 - 041 - 1000 - 16/20

- **Bore sizes ***
- **Total length (mm)**
  (omit if coupling)
- **Coupling size code**
- **Backlash option**
  2 = Standard coupling
  3 = Backlash free coupling
  6 = Standard cardan shaft
  7 = Backlash free cardan shaft
- **Material option**
  00 = Standard
  60 = Stainless steel
- **Hub style**
  0 = Jaw type
  2 = Clamp type
- **Connecting Products**

* Jaw type hubs that have been bored are machined with a keyway as standard unless otherwise stated. Clamp type hubs will be bored only unless otherwise stated.

COUPLING HUBS ARE STOCKED UN-BORED BUT CAN BE BORED & KEYED IN-HOUSE
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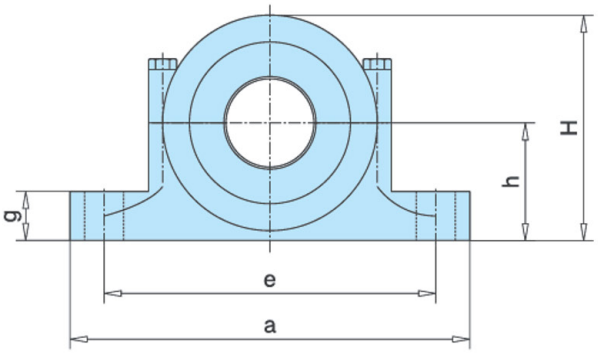
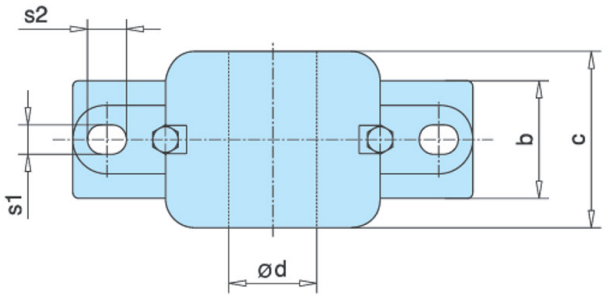
Pillow Blocks





Ø d	a	b	c	e	g	H	h	s1	s2	Order Code
20	165	46	67	130	19	71	40	15	20	SN 505
25	185	52	77	150	22	87	50	15	20	SN 506
30	185	52	82	150	22	92	50	15	20	SN 507
35	205	60	85	170	25	106	60	15	20	SN 508
40	205	60	85	170	25	115	60	15	20	SN 509
45	205	60	90	170	26	112	60	15	20	SN 510
50	255	68	95	210	28	127	70	18	23	SN 511
55	255	70	105	210	30	133	70	18	23	SN 512
60	275	80	110	230	30	148	80	18	23	SN 513
65	280	80	115	230	30	154	80	18	23	SN 515
70	315	90	120	260	32	175	95	22	27	SN 516
75	320	90	125	260	32	181	95	22	27	SN 517
80	345	100	145	290	35	192	100	22	27	SN 518
85	345	100	140	290	35	210	112	22	27	SN 519
90	380	110	160	320	40	215	112	26	32	SN 520
100	410	120	175	350	45	239	125	26	32	SN 522
110	410	120	185	350	45	271	140	26	32	SN 524
125	500	150	205	420	50	302	150	35	42	SN 528

WMH offers a range of DIN 736 standard pillow blocks complete with roller bearings and adapter sleeves. Housings are to DIN 5419 standard with two sided felt gasket.

This range of pillow blocks is suitable for intermediate bearing support of cardan connecting shafts as the adapter sleeve can be affixed to the outer diameter of the cardan shaft tube.

WMH Pillow blocks allow the speed of the cardan shaft to exceed the values depicted in the length-speed graph as the additional support reduces the length of tube that is free to vibrate / resonate.

In order to avoid distortion when one or more pillow blocks are used, only one of them should be configured as a fixed bearing.

FOR LONGER LENGTHS OR FOR HIGHER SPEED APPLCIATIONS WMH CAN PRODUCE CARDAN SHAFTS USING HARD & GROUND BAR - PLEASE ASK FOR DETAILS

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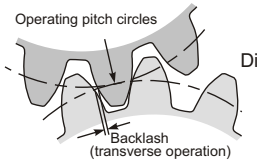
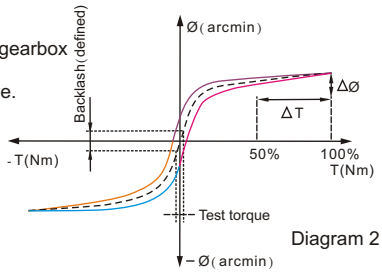
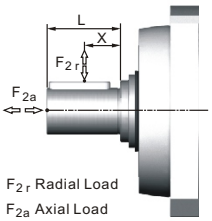
WMH Transmissions Limited

Glossary

Emergency Stop Torque T_{2NOT}	Nm	The Emergency Stop Torque is the maximum permitted torque at the output of gearbox. This may happen only occasionally and may not exceed 1,000 times during the whole service life.
Max. Acceleration Torque T_{2B}	Nm	Under the Cyclic Operation (S5), the Max. Acceleration Torque is the maximum torque which can be transmitted only briefly to the output of gearbox up to 1,000 cycles/hr.
No Load Running Torque	Nm	The No Load Running Torque is the min. torque to overcome the internal friction of a gearbox without loading*.
Nominal Input Speed n_{1N}	rpm	The Nominal Input Speed is the permitted input speed of gearbox by the Continuous Operation (S1) while the housing temperature does not exceed 90°C. This value is measured at environment temperature 25°C.
Max. Input Speed n_{1B}	rpm	The Max. Input Speed is the max. permitted input speed of gearbox by the Cyclic operation (S5). This value is measured at environment temperature 25°C and serves as the absolute limit of the gearbox.
Backlash	arcmin	The Backlash is the maximum angular measurement between two teeth of gears when the transverse operation occurs (refer to Diagram 1). The arcmin is the measurement unit for the backlash. One arcmin equals 1/ 60 degree, symbolized as 1'.  Diagram 1
Torsional Rigidity	Nm/arcmin	Torsional Rigidity is the quotient (△T / △Ø) between the applied torque and resulting torsion angle. This value indicates how much torque is needed on the gearbox to rotate the output shaft for 1 arcmin. The Torsional Rigidity can be determined by Hysteresis Curve. Hysteresis Curve When the input shaft is locked, increase torque at the output slowly up to T_{2B} in both directions and then release the torque gradually. According to the measured torque and torsion angle, a closed curve will be acquired as in the Diagram 2.  Diagram 2
Radial Load And Axial Load	N	The permitted radial and axial loads on output shaft of the gearbox depend on the design of the gearbox supporting bearings. 
Efficiency η	%	The transmission efficiency of the gears inside a gearbox (without friction).
Operating Temperature	° C	The Operating Temperature indicates the temperature of gearbox housing.
Degree of Protection		IP code stands for International Protection standard. The IP65 as example: the first IP number stands for protection degree against dust; the second IP number stands for protection against liquid.
Lubrication		synthetic lubrication grease. Alternate greases are available,
Running Noise	dB(A)	The Running Noise is measured depends on gearbox size, the ratio and the speed*. Higher speed usually induces higher noise level, while higher ratio induces lower noise level.
Moment of Inertia J_1	$kg.cm^2$	The Moment of Inertia J1 is a measurement of the effort applied to an object to maintain its momentary condition at rest or rotating.
Breakaway Torque	Nm	The Breakaway Torque is the minimum torque to start the rotation from the input side of gearbox. A smaller size or a higher ratio gearbox requests less Breakaway Torque.
Back Driving Torque	Nm	The Back Driving Torque is the minimum torque to start the rotation from the output side of gearbox. A larger size or a higher ratio gearbox requires greater Back Driving Torque.

*** THIS VALUE IS MEASURED AT AN ENVIRONMENTAL TEMPERATURE OF 25°C AND INPUT SPEED OF 3000 RPM – IF THE NOMINAL SPEED OF THE GEARBOX IS OVER 3000 RPM THEN THIS VALUE IS MEASURED BY THAT SPECIFIC NOMINAL INPUT SPEED**

WMH Transmissions Limited

" Part of your drive "

2 Centurion Way
Centurion Park
Tamworth
Staffordshire
B77 5PN

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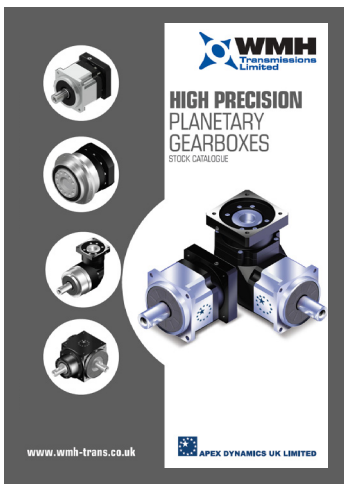

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