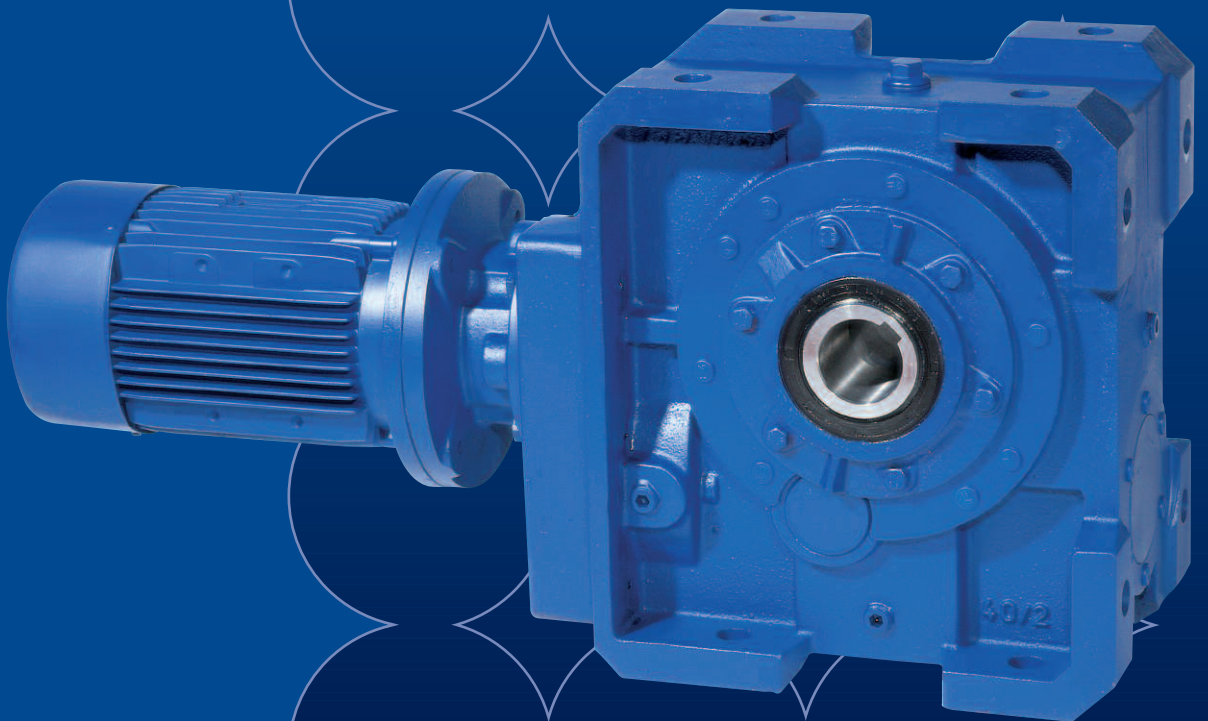


# *PM Series - PB Type*

## *Bevel-Helical Gear Units*



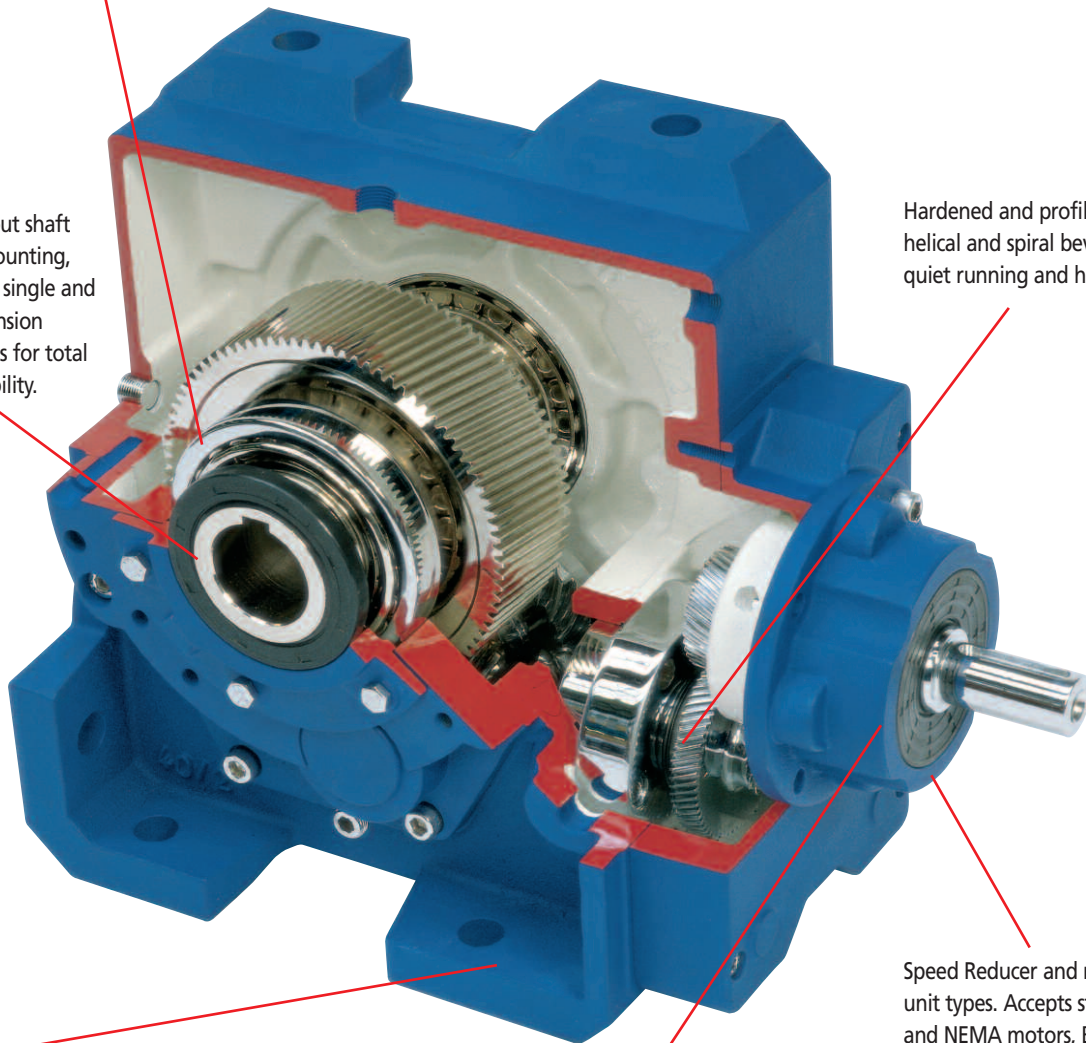
**RENOLD**  
*Superior Gear Technology*

## RENOLD PM Series - PB Type Product Features

Heavy duty taper roller bearings fitted for maximum load capacity and long life.

Hollow output shaft for direct mounting, with plug-in single and double extension output shafts for total design flexibility.

Hardened and profile ground helical and spiral bevel gears for quiet running and high efficiency.



One piece close grained cast iron gear case for strength and absorption of vibration for quiet running

Sprag clutch back stop option on motorised units to prevent drive reversals

Speed Reducer and motorised unit types. Accepts standard IEC and NEMA motors, B5 and B14 flanges.

### Applications:

- Conveyors
- Mining
- Timber
- Textiles
- Materials Handling
- Packaging Machinery
- Food Process Machinery
- Water Treatment
- Foundry equipment

**Contents**

	<b>Page No</b>
PM Series - PB Type Unit Product Features	2
ATEX Approval Details	4
General Specification	5
Product Design Variations	6 - 7
Unit Mounting and Handing Details	8 - 9
Electric Motor Specifications	10 - 12
Ordering Designation Code	13
Inertia Values	14
Selection of PM Series - PB Type Unit	15 - 16
Load Classification by Application	17
Overhung and Thrust Loads	18
Motorised Unit - Selection Data	19 - 31
Motorised Unit - Dimensions	32 - 35
Speed Reducer Unit - Overhung and Axial Load Capacities	36
Speed Reducer Unit - Exact Ratio	37
Speed Reducer Unit - Selection Data	38 - 47
Speed Reducer Unit - Dimensions	48 - 50
Plug-in Output Shaft Dimensions	51
Torque Restraint Bracket	52
Shrink Disc	53
Torque Arm Assembly	54
Installation, Maintenance and Storage	55
Lubrication	56
Oil Capacities	57
Weights	58 - 59
Renold Worldwide Sales and Service	62 - 63

## ATEX Approval Details

### ATEX Approval

**RENOLD** Gears products for operating in potentially explosive atmospheres.

### General

- **RENOLD** Gears units are classified as ATEX Group II Category 2 equipment, which embodies sufficient safeguards to be suitable for use in potentially explosive atmospheres for normal operation and for operation during an expected malfunction.
- It is essential that there is sufficient lubricant to prevent the gears and bearings running 'dry'. Gear units should be inspected daily for signs of oil leakage, overheating or noisy operation.
- Gear units should be cleaned at regular intervals depending on the operating conditions, to ensure that dust coatings never exceed 5mm. Plastic parts should be wiped clean with a damp cloth.
- Oil leaks should be dealt with as quickly as practical. Compound joint faces and shims should be cleaned and thread-locking sealant should be applied to bolts and plugs prior to re-assembly.

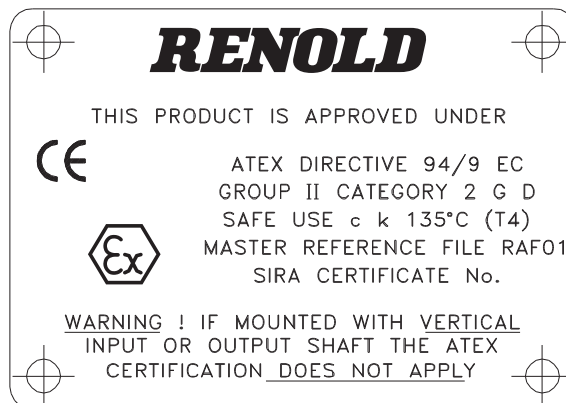
- The temperature of any external surfaces must not exceed the permitted maximum of 135°C (T4).
- Higher temperature class T3 is available dependant on unit mounting, ratio and gear type. For further details consult **RENOLD**.
- As a general rule, gear units should be mounted with their feet horizontal. For other mountings, particularly with shaft mounted units, consult **RENOLD** Gears.

WARNING: IF MOUNTING WITH VERTICAL INPUT OR OUTPUT SHAFTS, THE ATEX CERTIFICATION DOES NOT APPLY.

### Unit Selection

- The gear unit selection procedures must include an additional reliability factor of 1.25 for mechanical ratings and 1.25 for thermal ratings.

### ATEX Nameplate



## RENOLD PM Series - PB Type Product Specification

### Gear Case

The gear cases are of close grained cast iron with all joints and bearing bores accurately machined to ensure oil tightness and precise gear location.

### Shafts

Standard shaft extensions are to metric dimensions, but imperial shaft extensions for units complying with BS3027: 1968 or to suit the requirements of the North American market are also available. The output Shaft is manufactured in carbon steel, but if required by applicational conditions, can be made from high tensile steel, in single or double extension.

### Bearings

Standard metric taper/roller bearings are fitted throughout the **RENOLD** PM Series range of units in both single and double extension shaft options.

### Oil Seals

Semi-dual lip oil seals are fitted to all hollow output shaft units. However, provision has been made to fit two oil seals if weatherproofing or dustproofing is required.

### Lubrication

Gear and bearings are positively lubricated by oil from the sump in the underdriven and overdriven versions at normal motor speeds. With the vertical type, grease lubrication is necessary to the wheel line bearings.

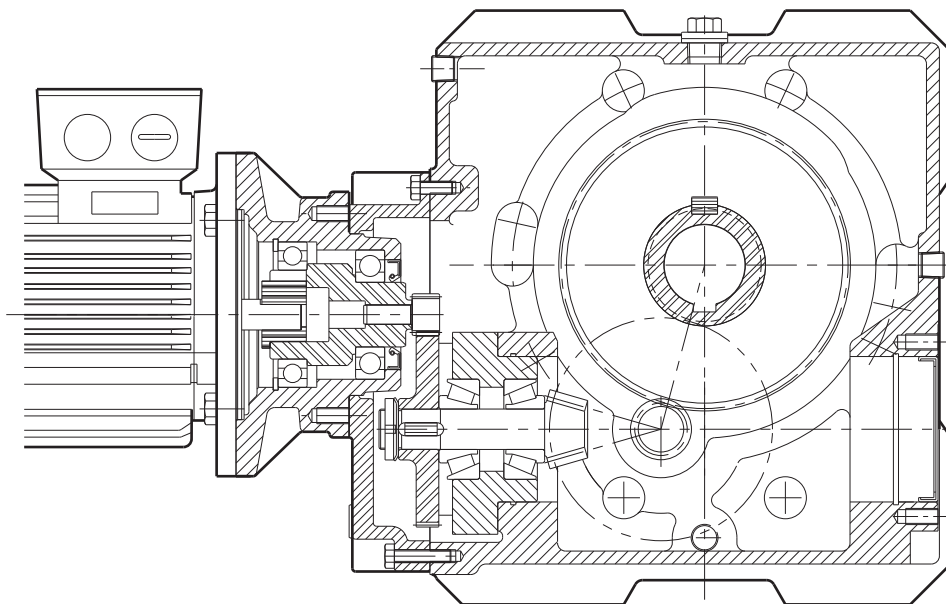
For lower speeds it may be necessary to consider grease lubrication of certain bearings and in this instance it is advisable to consult with Renolds Engineers. Full lubrication details can be found under the "Installation & Maintenance" section.

### Input Housing

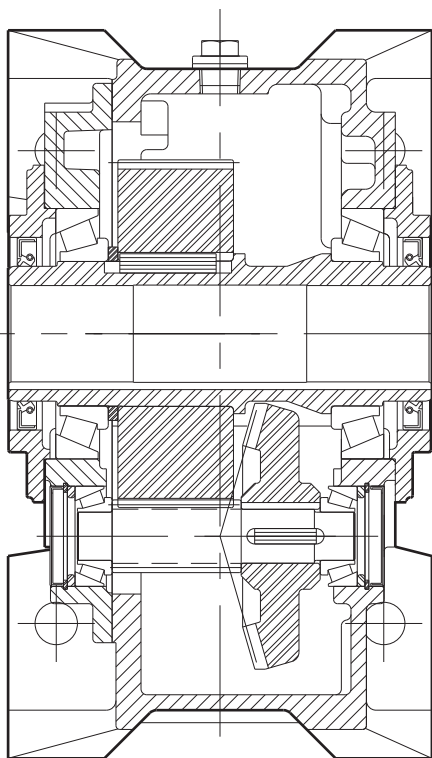
When the **RENOLD** PM Series unit is supplied as a non-motorised unit i.e. for direct coupling or driven via a V-belt or chain drive, a high speed input shaft housing is fitted. This consists of a robust housing containing the input shaft which is supported in maintenance-free bearings.

### Backstop

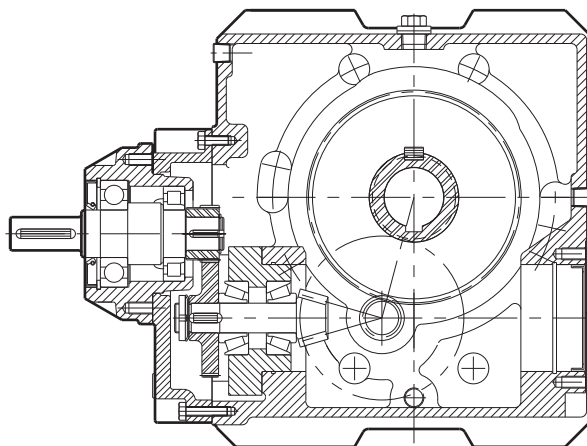
Sprag clutch backstops can be fitted to most motorised PB units to prevent unit run back when required. See pages 32 to 34 for unit sizes and motor frame sizes.



**Motorised unit with hollow output shaft.  
Motor adaptor suitable for all standard  
IEC and NEMA motors.**

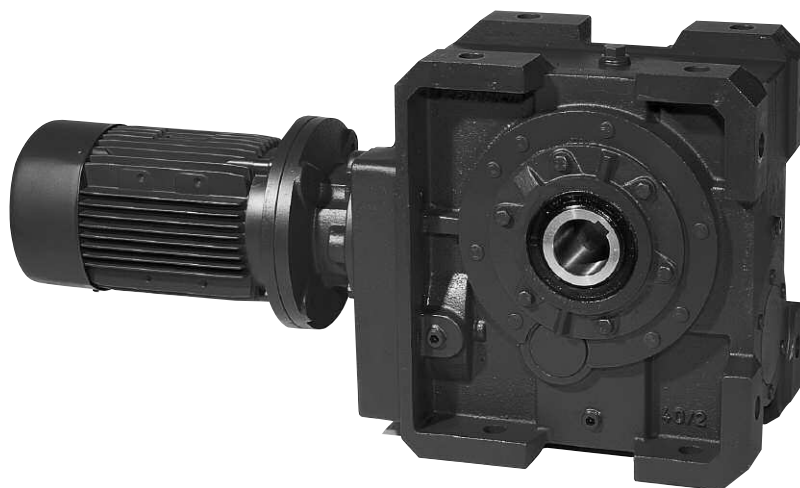


**Standard hollow output shaft  
with semi dual lip oil seal for  
added oil retention.**

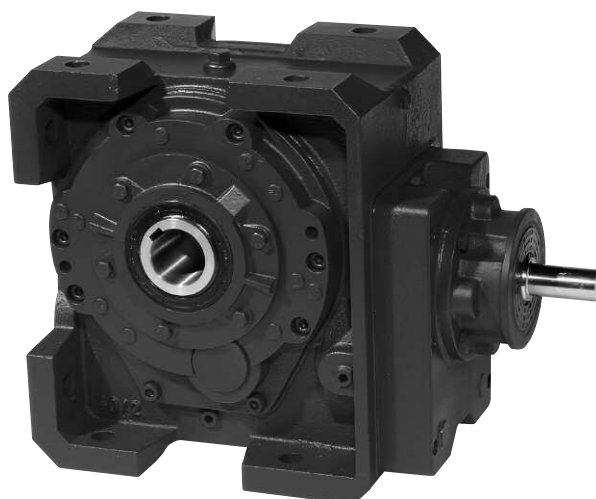


**Speed reducer unit with  
input shaft housing.**

## **RENOLD** PM Series PB Type - Product Design Variations



**PM Series - PB type motorised unit**

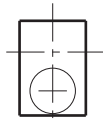


**PM Series - PB type speed reducer unit**

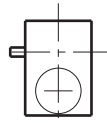


### Underdriven

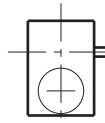
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\*Sprag backstop fitted.



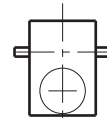
UA  
UB



UC  
UD

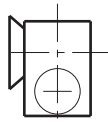


UE  
UF

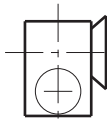


UG  
UH

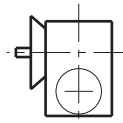
No Sprag backstop fitted.  
\*Sprag backstop fitted.



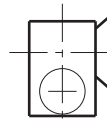
UJ  
UK



UL  
UM

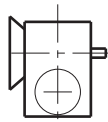


UN  
UP

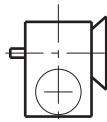


UQ  
UR

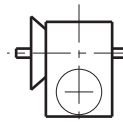
No Sprag backstop fitted.  
\*Sprag backstop fitted.



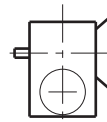
US  
UT



UU  
UV



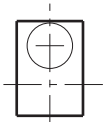
UW  
UX



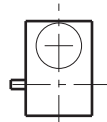
UY  
UZ

### Overdriven

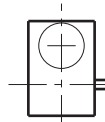
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\*Sprag backstop fitted.



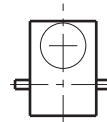
OA  
OB



OC  
CD

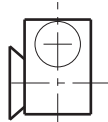


OE  
OF

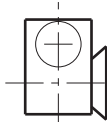


OG  
OH

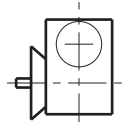
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\*Sprag backstop fitted.



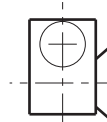
OJ  
OK



OL  
OM

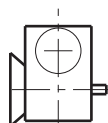


ON  
OP

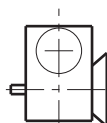


OQ  
OR

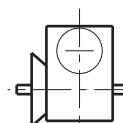
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\*Sprag backstop fitted.



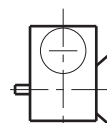
OS  
OT



OU  
OV



OW  
OX



OY  
OZ

\* BACKSTOP FITTED TO MOTORISED UNITS - D100 TO D200 FRAME SIZES ONLY

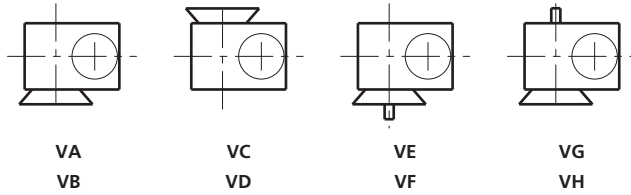
\* FOR ANY OTHER MOUNTING PLEASE REFER TO RENOLD GEARS



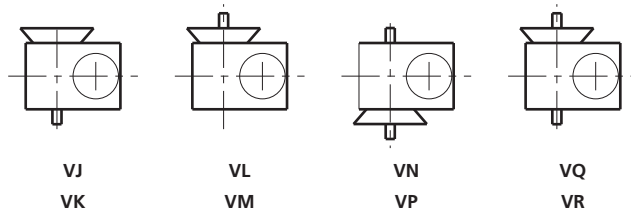
## RENOLD PM Series - PB Type - Mounting & Handing

### Vertical

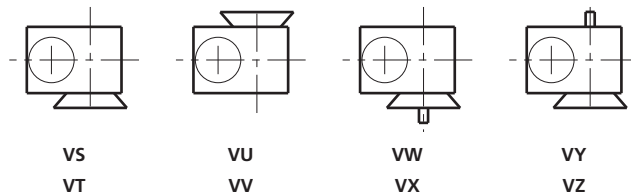
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\*Sprag backstop fitted.



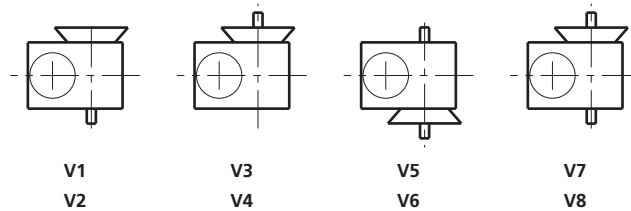
No Sprag backstop fitted.  
\*Sprag backstop fitted.



No Sprag backstop fitted.  
\*Sprag backstop fitted.

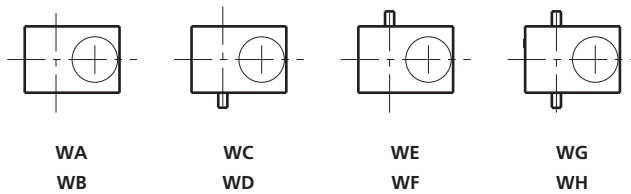


No Sprag backstop fitted.  
\*Sprag backstop fitted.

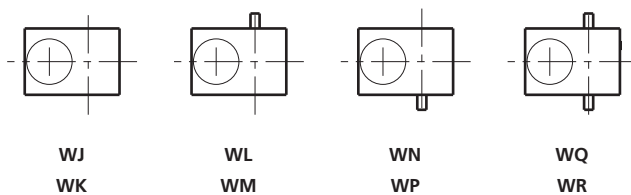


### Wall Mounting

No Sprag backstop fitted.  
\*Sprag backstop fitted.



No Sprag backstop fitted.  
\*Sprag backstop fitted.



\* BACKSTOP FITTED TO MOTORISED UNITS - D100 TO D200 FRAME SIZES ONLY

\* FOR ANY OTHER MOUNTING PLEASE REFER TO RENOLD GEARS

## Electric Motor Specification

### 4POLE/1500 RPM

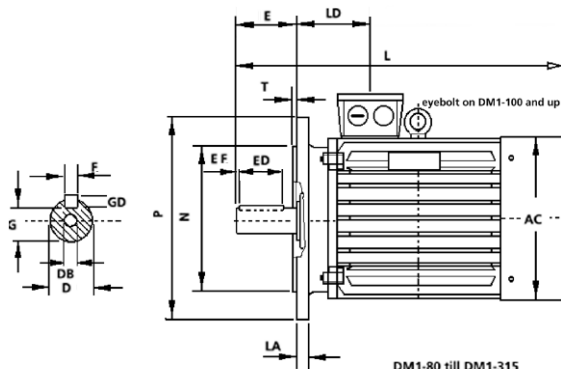
DMA1 = aluminium series 1 DM1 = cast iron series 1 IEC-DIN			Rated Output Power PN kW	Full Load Current			Full-Load Speed nN min-1	Full-Load Power Factor cos	Full-Load Efficiency %	Locked Rotor Current La/LN	Locked Rotor Torque Ma/MN	Breakdown Torque Mk/MN	Moment of Inertia J kgm2	Nett Weight IM B3 m kg
				380 V IU A	400 V IN A	420 V IO A								
DMA1	80	K4	0.55	1.58	1.55	1.56	1365	0.79	64.7	4.0	1.8	2.1	0.001146	8.9
DMA1	80	G4	0.75	2.00	1.99	2.00	1345	0.80	67.9	4.0	2.0	2.3	0.001263	9.6
DMA1	90	S4	1.10	2.75	2.76	2.73	1380	0.78	72.8	4.6	2.1	2.4	0.002761	12.5
DMA1	90	L4	1.50	3.72	3.78	3.93	1370	0.77	73.9	4.6	2.1	2.4	0.003283	15.0
DMA1	100	L4	2.20	5.13	5.12	4.80	1430	0.76	80.5	5.7	2.2	2.7	0.003119	19.2
DMA1	100	LX4	3.00	6.78	6.66	6.51	1400	0.82	79.5	5.2	2.0	2.6	0.004704	23.0
DMA1	112	M4	4.00	8.93	8.48	8.08	1430	0.82	83.2	5.8	2.1	2.6	0.006418	29.0
DMA1	132	S4	5.50	11.80	11.39	10.84	1435	0.85	82.3	6.5	2.0	2.5	0.013249	43.5
DMA1	132	M4	7.50	15.77	15.50	14.77	1435	0.82	84.8	6.5	2.2	2.5	0.016912	61.0
DM1	160	M4	11.00	22.1	21.2	21.3	1450	0.85	88.1	7.6	2.5	3.0	0.0724	113
DM1	160	L4	15.00	27.6	28.1	28.2	1460	0.86	89.5	7.9	2.7	3.1	0.0929	133
DM1	180	M4	18.50	35.3	33.4	33.4	1470	0.88	90.9	7.5	2.5	3.0	0.1350	167
DM1	180	L4	22.00	42.0	39.8	39.5	1465	0.88	90.9	7.5	2.2	3.1	0.1360	181
DM1	200	L4	30.00	55.6	53.3	52.0	1480	0.88	92.0	7.2	2.5	3.2	0.2450	232
DM1	225	S4	37.00	68.2	65.5	64.0	1485	0.88	92.3	7.3	2.0	2.8	0.3900	287
DM1	225	M4	45.00	81.3	79.1	76.0	1480	0.89	92.4	7.5	2.2	3.0	0.4500	322
DM1	250	M4	55.00	101	96.0	95.0	1480	0.89	93.0	7.0	2.3	3.1	0.6400	381
DM1	280	S4	75.00	137	131	126	1480	0.88	93.5	6.1	2.0	2.9	1.0450	510
DM1	280	M4	90.00	168	152	155	1485	0.88	94.2	7.8	2.7	3.3	1.3960	600

### 6POLE/1000 RPM

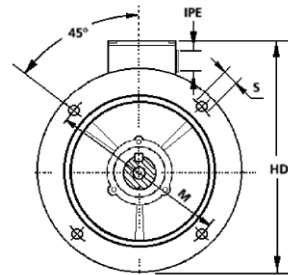
DMA1 = aluminium series 1 DM1 = cast iron series 1 IEC-DIN			Rated Output Power PN kW	Full Load Current			Full-Load Speed nN min-1	Full-Load Power Factor cos	Full-Load Efficiency %	Locked Rotor Current La/LN	Locked Rotor Torque Ma/MN	Breakdown Torque Mk/MN	Moment of Inertia J kgm2	Nett Weight IM B3 m kg
				380 V IU A	400 V IN A	420 V IO A								
DMA1	80	K6	0.37	1.19	1.26	1.26	915	0.67	63.0	3.5	2.0	2.4	0.001268	8.5
DMA1	80	G6	0.55	1.81	1.85	2.26	900	0.71	60.5	3.2	2.0	2.3	0.001392	9.2
DMA1	90	S6	0.75	2.35	2.31	2.30	910	0.71	65.6	3.5	2.0	2.3	0.00316	12.0
DMA1	90	L6	1.10	3.38	3.44	3.40	910	0.67	69.1	3.7	2.1	2.3	0.003794	14.0
DMA1	100	L6	1.50	3.92	3.88	3.87	935	0.76	73.3	4.1	1.9	2.2	0.004605	19.5
DMA1	112	M6	2.20	5.79	5.48	5.24	945	0.75	77.4	5.0	2.0	2.4	0.006949	28.0
DMA1	132	S6	3.00	7.39	7.07	6.97	960	0.78	78.3	5.4	1.8	2.2	0.012912	50.0
DMA1	132	M6	4.00	9.44	9.35	9.60	955	0.77	80.6	5.4	1.9	2.1	0.016082	58.0
DMA1	132	MX6	5.50	13.00	12.60	12.80	955	0.77	84.3	5.4	2.0	2.4	0.019174	65.0
DM1	160	M6	7.50	16.1	15.9	16.0	965	0.79	85.3	6.5	1.8	3.0	0.0800	108
DM1	160	L6	11.00	22.7	22.4	22.6	970	0.8	87.8	7.1	1.8	3.1	0.1080	131
DM1	180	L6	15.00	29.5	29.3	29.1	980	0.83	89.2	7.2	2.5	2.9	0.1670	171
DM1	200	L6	18.50	36.5	35.5	35.1	980	0.84	89.9	6.7	2.0	3.0	0.3020	216
DM1	200	LX6	22.00	42.3	40.6	39.8	975	0.87	89.8	6.7	2.0	2.8	0.3420	225
DM1	225	M6	30.00	57.6	55.4	54.2	985	0.85	91.7	6.2	2.3	2.8	0.5250	292
DM1	250	M6	37.00	69.5	67.3	65.7	985	0.87	91.5	6.8	2.1	3.1	0.8070	408
DM1	280	S6	45.00	79.1	80.2	77.3	985	0.88	92.4	6.5	2.0	2.9	1.3340	465
DM1	280	M6	55.00	97.6	99.0	95.4	985	0.87	92.7	6.7	2.1	3.0	1.5980	540

## Electric Motor Dimensions

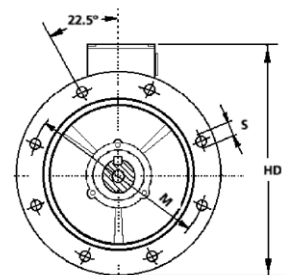
### DM1 : 4 POLE/1500 RPM



DM1-80 till DM1-315



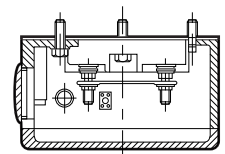
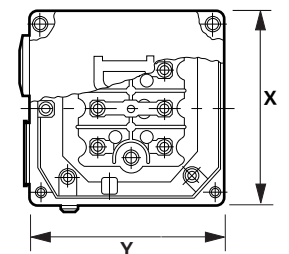
DM1-80 till DM1-200



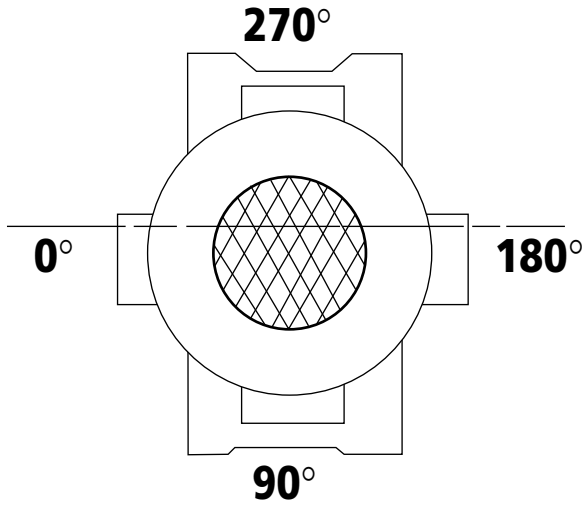
DM1-225 till DM1-280

Type	Frame	Poles	AC	D	E	ED	EF	F	G	GD	HD	L	LA	LD
DMA1	80	4/6	146	19	40	25	7.5	6	15.5	6	224	268	12	83
DMA1	90S	4/6	158	24	50	32	7.5	8	20	7	230	312	12	88
DMA1	90L	4/6	158	24	50	32	7.5	8	20	7	230	332	12	88
DMA1	100	4/6	190	28	60	45	7.5	8	24	7	271	367	15	83
DMA1	112	4/6	216	28	60	45	7.5	8	24	7	290	384	15	100
DMA1	132S	4/6	246	38	80	56	7.5	10	33	8	330	445	15	105
DMA1	132M	4/6	246	38	80	56	7.5	10	33	8	330	483	15	105
DM1	160M/MX	4/6	311	42	110	100	5.0	12	37	8	505	615	14	150
DM1	160L	4/6	311	42	110	100	5.0	12	37	8	505	670	14	150
DM1	180M	4/6	352	48	110	100	5.0	14	42.5	9	530	700	16	160
DM1	180L	4/6	352	48	110	100	5.0	14	42.5	9	530	740	16	160
DM1	200L/LX	4/6	394	55	110	100	5.0	16	49	10	580	770	17	190
DM1	225S	4	442	60	140	125	7.5	18	53	11	640	815	20	190
DM1	225M	4/6	442	60	140	125	7.5	18	53	11	640	845	20	190
DM1	250M	4/6	481	65	140	125	7.5	18	58	11	695	910	20	203
DM1	280S	4/6	543	75	140	125	7.5	20	67.5	12	770	995	23	220
DM1	280M	4/6	543	75	140	125	7.5	20	67.5	12	770	1045	23	220

Type	Frame	Poles	M	N	P	S	T	Flange	IPE	X	Y
DMA1	80	4/6	165	130j6	200	4x12	3.5	FF165	2xPg16	80	65
DMA1	90S	4/6	165	130j6	200	4x12	3.5	FF165	2xPg16	80	65
DMA1	90L	4/6	165	130j6	200	4x12	3.5	FF165	2xPg16	80	65
DMA1	100	4/6	215	180j6	250	4x15	4	FF215	2xPg16	80	65
DMA1	112	4/6	215	180j6	250	4x15	4	FF215	2xPg21	100	100
DMA1	132S	4/6	265	230j6	300	4x15	4	FF265	2xPg21	100	100
DMA1	132M	4/6	265	230j6	300	4x15	4	FF265	2xPg21	100	100
DM1	160M/MX	4/6	300	250j6	350	4x19	5	FF300	2xPg29	150	160
DM1	160L	4/6	300	250j6	350	4x19	5	FF300	2xPg29	150	160
DM1	180M	4/6	300	250j6	350	4x19	5	FF300	2xPg29	150	160
DM1	180L	4/6	300	250j6	350	4x19	5	FF300	2xPg29	150	160
DM1	200L/LX	4/6	350	300h6	400	4x19	5	FF350	2xPg36	188	208
DM1	225S	4	400	350h6	450	8x19	5	FF400	2xPg36	188	208
DM1	225M	4/6	400	350h6	450	8x19	5	FF400	2xPg36	188	208
DM1	250M	4/6	500	450h6	550	8x19	5	FF500	2xPg42	216	246
DM1	280S	4/6	500	450h6	550	8x19	5	FF550	2xPg42	216	246
DM1	280M	4/6	500	450h6	550	8x19	5	FF500	2xPg42	216	246



## Electric Motor - Terminal Box Position



Terminal Box Position	
A	0°
B	90°
C	180°
D	270°

Unless otherwise specified-position 'A' will be issued.

### Terminal Box

On motor sizes 71 to 225 the terminal box is an integral part of the frame.

Motor sizes 250 and above have a conventional terminal box that can rotate 180°. As standard in this range the terminal box entries are on the right side of the motor viewed from shaft end.

By rotating the terminal box, these entries can be transferred to the left side.

On the table below are the standard terminal arrangements and terminal box entries.

Motor Frame Size	Quantities and sizes		
	Terminals	Terminal box entries	
71	6 X M4	2 X Ø22,5	(1)
100	6 X M4	2 X Ø28,5	(1)
112	6 X M4	4 X Ø28,5	(2)
132	6 X M6	4 X Ø28,5	(2)
160	6 X M6	4 X Ø37	(2)
180	6 X M8	4 X Ø37	(2)
200 and 255	6 X M8	4 X Ø47	(2)
250 and 280	6 X M10	2 X Pg 42	(3)
315	6 X M10	2 X Pg 48	(3)
315 to 400	6 X M12	2 X Pg 48	(3)

- (1) One entry on each side
- (2) Two entries on each side
- (3) Two entries on the right side that can be transferred to the left side.

### Alternative Types of TEFV Motors

Single phase	Capacitor start / induction run Permanent capacitor Capacitor start / capacitor run
Three phase	Squirrel cage standard motors Two speed Increased safety - Eex e Flameproof Exd. non sparking Exn. Brake motors Marine requirements Smoke extract duty High Efficiency motors Dust Ignition Proof - BS6467 Zone Z Force ventilation + Encoders + Tacho's Variable speed drives Motor-inverter combination Wash down Tropicalised  DC Hydraulic Air

## Ordering Procedure - Unit Designation Code

To ensure that the correct PM Series PB Type unit is supplied and that your order is processed without delay, please quote the full designation code as detailed below:

### Motorised Unit

	<b>PB4</b>	<b>SC</b>	<b>D4P</b>	<b>040</b>	<b>UA</b>	<b>M</b>	<b>A</b>	<b>TS</b>	
Unit type and size	...								Special features
Ratio Code	.....								Motor terminal box (see page 12)
D flange 4 pole motor	.....								Metric 'M' or American 'A' shafts
4kW motor	.....								Unit hand of assembly (see page 8-9)

### Motorised Ready Unit - To suit free issue motor

	<b>PB4</b>	<b>SC</b>	<b>D100RDY</b>	<b>UA</b>	<b>M</b>	<b>WP</b>	
Unit type and size	...						Special features
Ratio Code	.....						Metric 'M' or American 'A' shafts
D100 motor ready	.....						Unit hand of assembly (see page 8-9)

### Reduction Gear or Speed Reducer Unit

	<b>PB4</b>	<b>Red XXX</b>	<b>SC</b>	<b>UA</b>	<b>M</b>	<b>SS</b>	
Unit type and size	...						Special features
Reduction gear	.....						Metric 'M' or American 'A' shafts
Ratio Code	.....						Unit hand of assembly (see page 8-9)

### Ratio codes for gear units PB35 to PB50 only

Special Features include:-

- BM - Braked motor
- SS - Slow speed running
- WP - Weather proof
- TR - Torque restraint bracket
- SD - Shrink disc
- TA - Torque arm bracket

RATIO	CODE	RATIO	CODE	RATIO	CODE	RATIO	CODE
016	SA	032	SD	063	SG	125	SK
020	SB	040	SE	080	SH	160	SL
025	SC	050	SF	100	SJ		

### Ratio codes for gear units PB60 to PB80 only

RATIO	CODE	RATIO	CODE	RATIO	CODE	RATIO	CODE
016	TA	032	TD	063	TG	125	TK
020	TB	040	TE	080	TH	160	TL
025	TC	050	TF	100	TJ		

**RENOLD PM Series - PB Type Inertia Values  $WR^2$  (kgm<sup>2</sup>)****Input shaft (Reduction)**

Nominal Ratio	PB35	PB40	PB50	PB60	PB70	PB80
20	0.00098	0.00098	0.00098	0.00496	0.00496	0.00496
25	0.00079	0.00079	0.00079	0.00331	0.00331	0.00331
32	0.00063	0.00063	0.00063	0.00297	0.00297	0.00297
40	0.00058	0.00058	0.00058	0.00695	0.00695	0.00695
50	0.00054	0.00054	0.00054	0.00415	0.00415	0.00415
63	0.00054	0.00054	0.00054	0.00325	0.00325	0.00325
80	0.00053	0.00053	0.00053	0.0021	0.0021	0.0021
100	0.00053	0.00053	0.00053	0.00207	0.00207	0.00207
125	0.00053	0.00053	0.00053	0.00206	0.00206	0.00206
160	0.00053	0.00053	0.00053	0.00212	0.00212	0.00212

**Input shaft (Motorised)**

Nominal Ratio	PB35	PB40	PB50	PB60	PB70	PB80
20	0.00118	0.00118	0.00118	0.00611	0.00611	0.00611
25	0.00099	0.00099	0.00099	0.00446	0.00446	0.00446
32	0.00083	0.00083	0.00083	0.00412	0.00412	0.00412
40	0.00078	0.00078	0.00078	0.00810	0.00810	0.00810
50	0.00074	0.00074	0.00074	0.00530	0.00530	0.00530
63	0.00074	0.00074	0.00074	0.00440	0.00440	0.00440
80	0.00073	0.00073	0.00073	0.00325	0.00325	0.00325
100	0.00073	0.00073	0.00073	0.00322	0.00322	0.00322
125	0.00073	0.00073	0.00073	0.00321	0.00321	0.00321
160	0.00073	0.00073	0.00073	0.00327	0.00327	0.00327

**Bevel pinionshaft line**

Nominal Ratio	PB35	PB40	PB50	PB60	PB70	PB80
20	0.00033	0.00037	0.00049	0.00547	0.00477	0.00575
25	0.00051	0.00055	0.00067	0.00682	0.00612	0.00710
32	0.00072	0.00076	0.00088	0.00891	0.00821	0.00919
40	0.00100	0.00104	0.00116	0.01104	0.01034	0.01132
50	0.00117	0.00121	0.00133	0.01286	0.01216	0.01314
63	0.00150	0.00154	0.00166	0.01496	0.01426	0.01524
80	0.00182	0.00186	0.00198	0.01790	0.01720	0.01818
100	0.00219	0.00223	0.00235	0.02073	0.02003	0.02101
125	0.00250	0.00254	0.00266	0.02261	0.02191	0.02289
160	0.00273	0.00277	0.00289	0.02463	0.02393	0.02491

**Layshaft**

Nominal Ratio	PB35	PB40	PB50	PB60	PB70	PB80
ALL	0.00273	0.00591	0.01401	0.02623	0.07315	0.12143

**Hollow output shaft**

Nominal Ratio	PB35	PB40	PB50	PB60	PB70	PB80
ALL	0.02143	0.04903	0.12337	0.29365	0.64782	1.23447

**Plug-in output shaft**

Type	PB35	PB40	PB50	PB60	PB70	PB80
Single Ext	0.00059	0.00163	0.00398	0.00866	0.02554	0.03846
Single Ext - Flanged	0.00080	0.00226	0.00502	0.01023	0.03140	0.04690
Double Ext	0.00071	0.00205	0.00483	0.10588	0.32410	0.04979
Double Ext - Flanged	0.00092	0.00268	0.00588	0.01215	0.03827	0.05823

See page 16 for examples of total unit inertia.

## RENOLD PM Series - PB Type Selection Information

To select a motorised or non-motorised gear unit for an application, the following information must be available.

### Power/Torque

- Input or output (kW) or torque (Nm).
- Type and power output of prime mover (kW). Required mounting position.
- For input speeds below 250 rev/min consult our Technical Sales Department giving details of required output torque (Nm) and diameter of driven shaft (mm).

### Speed

Gear unit input and output rev/min.

### Duty

- The characteristics of the drive eg. degree of impulsiveness of the driven load.
- Duration of service in hours/day.
- Starting load (kW) and number of starts per day.
- For intermittent duty, reversing or shock loading, state normal power (kW) and frequency.
- Disposition and details of external loads imposed on input/output shafts.  
Diameter of driven shaft in the case shaft mounting arrangement.
- Working conditions, i.e. clean, dusty, moist, abnormal temperatures etc.

If the operating conditions are in any way unusual it is advisable to consult our Technical Sales Department.

### Enquiry/Ordering Procedure

At the order or enquiry stage, please quote the catalogue reference, shaft assembly number and nominal ratio or exact ratio if this is important (see tables). Non standard mounting positions should be indicated with a sketch. Where a double extension wormwheel shaft is required, please state any special requirements regarding alignment of keyways.

### Mechanical Rating

The mechanical powers listed are those which the PM Series units will transmit for 10 hours each day and correspond to a service factor of 1.0. Where non-uniform loading or a working day other than 10 hours is involved, a service factor  $f_D$  should be applied to the selection power or torque which is taken from table 2. High numbers of

starts per hour also influence the mechanical selection. Table 3 shows the starts factor  $f_S$  which should also be applied to the selection power or torque.

For guidance a comprehensive list of the various load conditions for a number of applications is given in Table 1. When confirming the mechanical selection powers therefore, the rating must be equal to or greater than calculated power or torque demand  $\times$  application service factor  $f_D$  (table 1 and table 2)  $\times$  starts factor  $f_S$  (table 3)

### Efficiencies

The efficiency figures are approximate only and are those that could be expected from a gearbox which is fully run-in and operating under full load with the lubricant at its full working temperature.

For intermittent rating where the lubricant may remain comparatively cool, the efficiency may be somewhat lower due to the increased oil churning losses associated with the higher viscosity of the cool oil. We shall be pleased to advise on any particular application.

### Selection Procedure

#### MOTORISED UNIT SELECTION PROCEDURE PM SERIES MOTORISED

To select a PM series motorised unit, the following procedure should be followed.

- Determine required output speed.
- Select the total Mechanical Service Factor  $f_D$  (table 2) and Starts Factor  $f_S$  (table 3)  
Total Mechanical Service Factor =  $f_D \times f_S$
- Determine the power absorbed by the machine.  
Absorbed Power (kW) = 
$$\frac{\text{Absorbed torque (Nm)} \times \text{Speed (RPM)}}{9550}$$
- Select an electric motor that will give an output power greater than that of the absorbed power above.
- Select a gear unit from the tables on pages 26 to 38 using the motor power and the output speed as the basis.  
Ensure that the Mechanical service factor  $S_f$  of the unit selected exceeds the selection factor from b) above.

#### NON-MOTORISED UNIT SELECTION PROCEDURE

When a non-motorised gear unit is under consideration proceed as follows:-

- Establish the ratio, input speed and input power or output torque required.
- Determine the Load Classification for the appropriate application from table 1 and the corresponding Service Factor from table 2. Multiply this by the factor for starts per hour in table 3. The input power or output torque in 1 must now be multiplied by this factor in order to establish the required mechanical rating. This value must be equal to or less than the Mechanical Rating listed against the appropriate rating and input speed shown on pages 36 to 45.
- Where an output shaft is fitted, check that any Overhung and/or Axial loads applied are within the capabilities of the unit - see page 36.



## RENOLD PM Series - Selection Examples

Mechanical Selection Torque	Nm =	Actual Torque (Nm) Requirement	X	Mechanical Service (fd) Factor	X	Starts (fs) Factors
Mechanical Selection Power	(kW) =	Actual Power (kW) Requirement	X	Mechanical Service (fd) Factor	X	Starts (fs) Factor

### Example 1 [Motorised Unit]

A motorised gear unit is required to drive an inclined chain elevator having a headshaft torque of 4200Nm, operating for 24 hours per day continuously at 44 RPM. The duty is considered a steady load.

$$\begin{aligned} \text{a) Approximate motor power (kW)} &= \frac{4200 \times 45}{9550} \\ &= 19.8 \text{ kW} \end{aligned}$$

Nearest motor power is 22 kW.

b) From the Load Classification and Service Factor tables 1 and 2, a steady load operating 24 hours/day the duty factor  $f_D = 1.25$ .

c) The starts factor from table 3 for continuous running is  $f_S = 1$ .

$$\begin{aligned} \text{d) Total selection factor } S &= f_D \times f_S \\ &= 1.25 \times 1 \\ &= 1.25 \end{aligned}$$

e) From the selection tables on pages 19 to 31 a 22kW drive can be found on page 30. 45 RPM is the closest speed to the one required offering a mechanical service factor SF of 1.76 which satisfies the selection factor in d) above.

The selected unit is a **PB7SDD4P22\*\*\***

### MOTORISED UNIT INERTIA

$$\text{Total Input Shaft inertia} = \text{motor inertia} + \text{motorised input shaft inertia}$$

$$\text{Bevel pinion Shaft inertia} = \text{Bevel pinion Shaft inertia}$$

$$\text{Hollow output Shaft inertia} = \text{Hollow output shaft inertia}$$

$$\text{Total plug-in Output shaft Inertia} = \text{Hollow output shaft inertia} + \text{plug-in shaft inertia}$$

### Example 2 Non-Motorised Unit [Speed Reducer]

A right angle gear unit is required to drive a machine using an electric motor as the prime mover @ 1500 RPM. The output torque required is 2100Nm with a gear ratio of 100:1.

The duty cycle is heavy shock load, 10 hours/day running with 7 stops/starts per hour. Maximum ambient temperature is 32 degrees C.

a)	mechanical selection torque	=	Actual torque	X	mechanical service factor $f_D$ [table 1]	X	starts factor $f_S$ [table 2]
		=	2100	X	1.75	X	1.2
		=	4410 Nm				

The selection tables on page 38 to 47 show that for a gear ratio of 100:1 page 45 @ 1500 RPM the PB 6 unit is the size that fulfills both the selection criteria in a)

The unit selection is **PB6REDXXXSJ\*\*\***

### NON MOTORISED INERTIA [SPEED REDUCER]

$$\text{Total Input Shaft inertia} = \text{input shaft (reduction)}$$

$$\text{Bevel pinion Shaft inertia} = \text{Bevel pinion Shaft inertia}$$

$$\text{Hollow output Shaft inertia} = \text{Hollow output shaft inertia}$$

$$\text{Total plug-in Output shaft Inertia} = \text{Hollow output shaft inertia} + \text{plug-in shaft inertia}$$

TOTAL INERTIA VALUES With respect to INPUT	=	input shaft values	+	bevel pinionshaft helical ratio <sup>2</sup>	+	layshaft values	+	output values
TOTAL INERTIA VALUES With respect to OUTPUT	=	output values	+	layshaft values x (final helical ratio) <sup>2</sup>	+	bevel pinion shaft x (Bevel ratio <sup>2</sup> x Final ratio <sup>2</sup> )	+	(input shaft value x overall actual rate <sup>2</sup> )

## RENOLD PM Series - Load Classification by Application

**Table 1**

Agitators	S	Sugar (1)	M	Medium duty	M	Individual drives	H	single acting: 1 or 2 cylinders	*
Pure liquids	S	Dredges	M	Skip hoist	M	Reversing	*	double acting: single cylinder	*
Liquids and solids	M	Cable reels	M	Laundry	M	Wire drawing and flattening machine	M	Rotary - gear type	S
Liquids-variable density	M	Conveyors	M	Washers - reversing	M	Wire winding machine	M	Rotary - lobe, vane	S
Blowers	S	Cutter head drives	H	Tumblers	M	<b>Mills, rotary type</b>		<b>Rubber and plastics industries</b>	
Centrifugal	S	Jig drives	H	<b>Line shafts</b>		Ball (1)	M	Crackers (1)	H
Lobe	M	Manoeuvring winches	M	Driving processing equipment	M	Cement kilns (1)	M	Laboratory equipment	M
Vane	S	Pumps	M	Light	M	Dryers and coolers (1)	M	Mixed mills (1)	H
Brewing and Distilling	S	Screen drive	H	Other line shafts	S	Kilns other than cement	M	Refiners (1)	M
Bottling machinery	S	Stackers	M	<b>Lumber industry</b>		Pebble (1)	M	Rubber calenders (1)	M
Brew kettles-continuous duty	S	Utility winches	M	Barkers, hydraulic, mechanical	M	Rod, plain & wedge bar (1)	M	Rubber mill, 2 on line (1)	M
Cookers-continuous duty	S	<b>Dry dock cranes</b>		Burner conveyor	M	Tumbling barrels	H	Rubber mill, 3 on line (1)	S
Mash tubs-continuous duty	S	Main hoist	(2)	Chain saw and drag saw	H	<b>Mixers</b>		Sheeter (1)	M
Scale hopper-frequent starts	M	Auxiliary hoist	(2)	Chain transfer	H	Concrete mixers continuous	M	Tyre building machines	*
<b>Can filling machines</b>	<b>S</b>	Boom, luffing	(2)	Crane/may transfer	H	Concrete mixers intermittent	M	Tyre and tube press openers	*
<b>Cane knives (1)</b>	<b>M</b>	Rotating, swing or slew	(3)	De-barking drum	H	Constant density	S	Tubers and strainers (1)	M
<b>Car dumpers</b>	<b>H</b>	Tracking, drive wheels	(4)	Edger feed	M	Variable density	M	Warming mills (1)	M
<b>Car pullers</b>	<b>M</b>	Elevators		Gang feed	M	<b>Oil industry</b>		Sand miller	M
<b>Classifiers</b>	<b>S</b>	Bucket - uniform load	S	Green chain	M	Chillers	M	Screens	M
<b>Classifiers</b>	<b>M</b>	Bucket - heavy load	M	Live rolls	H	Oil well pumping	*	Air washing	S
<b>Clay working machinery</b>	<b>M</b>	Bucket - continuous	S	Log deck	H	Paraffin filter press	M	Rotary, stone or gravel	M
Brick press	H	Centrifugal discharge	S	Log haul-incline	H	Rotary kilns	M	Travelling water intake	S
Briquette machine	H	Escalators	S	Log haul-well type	H	<b>Paper mills</b>		<b>Sewage disposal equipment</b>	
Clay working machinery	M	Freight	M	Log turning device	M	Agitators (mixers)	M	Bar screens	S
Pug mill	M	Gravity discharge	S	Main log conveyor	S	Barker-auxiliaries hydraulic	M	Chemical feeders	S
<b>Compressors</b>	<b>S</b>	Man lifts	*	Off bearing rolls	M	Barker-mechanical	H	Collectors	S
Centrifugal	S	Planer feed chains	*	Planer feed chains	M	Barking drum	H	Dewatering screws	M
Lobe	M	<b>Extruders (plastic)</b>		Planer floor chains	M	Beater and pulper	M	Scum breakers	M
Reciprocating - multi-cylinder	M	Film	S	Planer tilting hoist	M	Bleacher	S	Slow or rapid mixers	M
Reciprocating - single cylinder	M	Sheet	S	Re-saw merry-go-round conveyor	M	Calenders	M	Thickeners	M
<b>Conveyors - uniformly loaded or fed</b>	<b>M</b>	Coating	S	Roll cases	H	Calenders-super	H	Vacuum filters	M
Apron	S	Rods	S	Slab conveyor	H	Converting machine except cutters, platers	M	<b>Slab pushers</b>	M
Assembly	S	Tubing	S	Small waste conveyor-belt	S	Conveyors	S	<b>Steering gear</b>	M
Belt	S	Blow moulders	M	Small waste conveyor-chain	M	Couch	M	<b>Stokers</b>	*
Bucket	S	Pre-plasticiers	M	Sorting table	M	Cutters, platers	M	<b>Sugar industry</b>	
Chain	S	Fans	M	Tipple hoist conveyor	M	Cylinders	M	Cane knives (1)	M
Flight	S	Centrifugal	S	Tipple hoist drive	M	Dryers	M	Crushers (1)	M
Oven	S	Cooling towers	S	Transfer conveyors	M	Fell stretcher	M	Mills (1)	M
Screw	S	Induced draft	*	Transfer rolls	M	Fell whipper	M	<b>Textile industry</b>	
<b>Conveyors - heavy duty not uniformly fed</b>	<b>M</b>	Forced draft	*	Tray drive	M	Jordans	H	Batchers	M
Apron	M	Induced draft	M	Trimmer feed	M	Log haul	H	Calenders	M
Assembly	M	Large, mine etc.	M	Waste conveyor	M	Presses	M	Cards	M
Belt	M	Large, industrial	M	<b>Machine tools</b>		Pulp machine reel	M	Dry cans	M
Bucket	M	Light, small diameter	S	Bending roll	S	Stock chest	H	Dryers	M
Chain	M	Feeders	M	Punch press-gear driven	H	Suction roll	M	Dyeing machinery	M
Flight	M	Apron	M	Notching press-belt drive	*	Washers and thickeners	M	Looms	M
Live roll	*	Belt	M	Plate planners	H	Winders	M	Mangles	M
Oven	M	Disc	S	Tapping machine	H	<b>Printing presses</b>	*	Nappers	M
Reciprocating	H	Reciprocating	H	<b>Other machine tools</b>		<b>Pullers</b>		Pads	M
Screw	M	Screw	M	Main drives	M	Barge haul	S	Range drives	M
Shaker	H	<b>Food industry</b>		Auxiliary drives	M	<b>Pumps</b>		Slashers	M
<b>Crane Drives - not dry dock</b>	<b>M</b>	Beef slicer	M	<b>Metal mills</b>		Centrifugal	S	Soapers	M
Main hoists	S	Cereal cooker	S	Drawn bench carriage and main drive	M	Proportioning	M	Spinners	M
Bridge travel	*	Dough mixer	M	Pinch, dryer and scrubber rolls, reversing	*	Reciprocating	M	Tenter frames	M
Trolley travel	*	Meat grinder	M	Slitters	M	single acting:		Washers	M
<b>Crushers</b>	<b>M</b>	<b>Generators - not welding</b>	<b>S</b>	Table conveyors non-reversing group drives	H	3 or more cylinders	M	Winders	M
Ore	H	<b>Hammer mills</b>	<b>H</b>			double acting:		Windlass	*
Stone	H	<b>Hoists</b>	<b>H</b>			2 or more cylinders	M		
		Heavy duty	H						

For multiple stop start applications and full load starts please refer to Renold Gears

### Service Factors

**Table 2** (Service Factor  $f_d$ )

Prime mover (Drive input)	Driven machinery characteristics			
	Duration Service hours/day	Steady load	Medium impulsive	Highly impulsive
Electric, Air & Hydraulic Motors or Steam Turbine (Steady input)	Intermittent -			
	3hrs/day max	0.90	1.00	1.50
	3 - 10	1.00	1.25	1.75
	over 10	1.25	1.50	2.00
Multi-cylinder I.C. engine (Medium impulsive input)	Intermittent -			
	3hrs/day max	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	over 10	1.50	1.75	2.25
Single-cylinder I.C. engine (Highly impulsive input)	Intermittent -			
	3hrs/day max	1.25	1.50	2.00
	3 - 10	1.50	1.75	2.25
	over 10	1.75	2.00	2.50

**Table 3** Factor for Starts/Hours ( $f_s$ )


Maximum number of starts per hour	0 - 1	1 - 30	30 - 60	60 -
Starts Factor $f_s$	1.0	1.2	1.3	1.5

- S = Steady  
M = Medium Impulsive  
H = Highly Impulsive  
\* = Refer to Renold

- (1) = Select on 24 hours per day service factor only.  
(2) = Use service factor of 1.00 for any duration of service.  
(3) = Use service factor of 1.25 for any duration of service.  
(4) = Use service factor of 1.50 for any duration of service.

### Note

Machinery characteristics and service factors listed in this catalogue are a guide only. Some applications (e.g. constant power) may require special considerations. Consult Renold Gears.



**IMPORTANT**

Units to ATEX approval must be selected with a minimum service factor of 1.25.

**Table 4** Thermal Service Factor  $f_t$

Ambient °C	10	20	30	40	50	60
Temp °F	50	68	86	105	122	140
Factor $f_t$	0.87	1.0	1.16	1.35	1.62	1.97

## RENOLD PM Series - Overhung and Thrust Loads

Output shafts of gear units are frequently fitted with a spur pinion, chain pinion or belt pulley causing an overhung load to be imposed on the output shaft and bearings. These loads can generally be sustained by the gear unit; however, if the load is greater than the maximum allowable load for the unit, it may be necessary to either select a larger unit or to lessen the effect of the load on the shaft bearings. This can be done in two ways. The pinion can be mounted on a shaft in its own bearings and the shaft coupled to the gear unit; or the wheel shaft may be extended beyond the overhung load and fitted with an outboard bearing. In order to obtain the best possible arrangement for a particular application (where large over hung loads are anticipated) customers are advised to submit details of the load to our Sales Technical Staff for their consideration.

In the interests of good design, the overhung member should be fitted as close as possible to the gear case in order to minimise the stresses and reduce the deflecting moment on the unit.

The maximum imposed axial thrust and overhung loads to which the units can be subjected are given in tables 5 and 6.

Imposed axial thrust loads can also be minimised by the use of flexible couplings on the input and output shafts.

For drives where both imposed thrust and overhung loads are encountered, it is advisable to consult our Technical Sales Staff.

Where a double extension shaft is fitted, the maximum overhung loads listed apply in full to each shaft extension.

Unit Size	X
PB35	150
PB40	170
PB50	200
PB60	235
PB70	270
PB80	270

- based on Single Extension Plug-in Shaft

The overhung load may be calculated by the following formula:

$$\frac{9.55P \times 10^6 \times X}{R \times S} \times F \text{ (Newtons)}$$

Where P = Power absorbed at output shaft (kW)

S = Speed of output shaft in rev/min

R = Pitch circle radius of chain pinion, spur or helical gear, or belt pulley in mm.

F = Overhung drive application factor as follows:

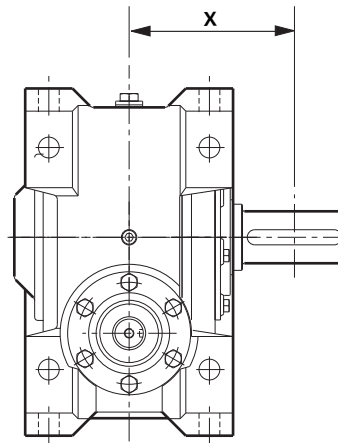
Chain pinion 1.00

Spur or helical gear 1.25

Vee pulley 1.50

Flat belt pulley 2.00

The overhung load capacities listed in table 5 assume the load is applied mid-way along the output shaft extension, the relevant dimension from the centre line of the unit being as given below.



**RENOLD PM Series - PB Type - Motorised - Selection Data**

$P_1$ 0.55 kW		4P - D80KD 1365 RPM				
		6P - D80GD 900 RPM				
$n_2$ rpm	Actual Ratio i	$M_2$ Nm	$S_F$	Overhung Load (max.) N	Axial Load (max.) N	Product Code
73	18.78	70	12.12	9000	12000	PB3SBD4P005***
55	24.76	92	9.20	9000	12000	PB3SCD4P005***
43	31.64	118	7.20	9000	12000	PB3SDD4P005***
33	41.09	153	5.54	9000	12000	PB3SED4P005***
29	47.28	176	4.82	9000	12000	PB3SFD4P005***
22	61.05	228	3.73	9000	12000	PB3SGD4P005***
18	77.01	287	2.96	9000	12000	PB3SHD4P005***
14	100.96	377	3.98	18000	16000	PB4SJD4P005***
14	100.96	377	2.26	9000	12000	PB3SJD4P005***
11	128.60	480	3.13	18000	16000	PB4SKD4P005***
11	128.60	480	1.77	9000	12000	PB3SKD4P005***
8.8	155.40	580	2.59	18000	16000	PB4SLD4P005***
8.8	155.40	580	1.47	9000	12000	PB3SLD4P005***
7.1	127.12	720	3.65	25000	20000	PB5SKD6P005***
7.0	128.60	653	2.30	18000	16000	PB4SKD6P005***
7.0	128.60	728	1.17	9000	12000	PB3SKD6P005***
5.9	153.61	870	3.02	25000	20000	PB5SLD6P005***
5.8	155.40	789	1.90	18000	16000	PB4SLD6P005***
5.8	155.40	880	0.97	8450	12000	PB3SLD6P005***

**Key**

- $n_2$  Output Speed, rpm  
i Overall Ratio  
 $M_2$  Output Torque Nm, Mechanical  
 $S_F$  Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

$P_1$ 0.75 kW		4P - D80GD 1345 RPM				
		6P - D90SD 910 RPM				
$n_2$	Actual Ratio	$M_2$	$S_F$	Overhung Load (max.) N	Axial Load (max.) N	Product Code
rpm	i	Nm				
72	18.78	97	8.76	9000	12000	PB3SBD4P007***
54	24.76	128	6.65	9000	12000	PB3SCD4P007***
43	31.64	163	5.20	9000	12000	PB3SDD4P007***
33	41.09	212	4.00	9000	12000	PB3SED4P007***
28	47.28	244	3.48	9000	12000	PB3SFD4P007***
22	61.05	315	2.70	9000	12000	PB3SGD4P007***
17	77.01	398	3.77	18000	16000	PB4SHD4P007***
17	77.01	398	2.14	9000	12000	PB3SHD4P007***
13	100.96	521	2.88	18000	16000	PB4SJD4P007***
13	100.96	521	1.63	9000	12000	PB3SJD4P007***
11	127.12	657	4.00	25000	20000	PB5SKD4P007***
10	128.60	664	2.26	18000	16000	PB4SKD4P007***
10	128.60	664	1.28	9000	12000	PB3SKD4P007***
8.8	153.61	793	3.31	25000	20000	PB5SLD4P007***
8.7	155.40	803	1.87	18000	16000	PB4SLD4P007***
8.7	155.40	803	1.06	9000	12000	PB3SLD4P007***
7.2	127.12	970	2.70	25000	20000	PB5SKD6P007***
7.1	128.60	881	1.70	18000	16000	PB4SKD6P007***
7.1	128.60	982	*0.87	5350	12000	PB3SKD6P007***
5.9	153.61	1173	2.24	25000	20000	PB5SLD6P007***
5.9	155.40	1064	1.41	18000	16000	PB4SLD6P007***

### Key

- $n_2$  Output Speed, rpm
- i Overall Ratio
- $M_2$  Output Torque Nm, Mechanical
- $S_F$  Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

$P_1$ 1.1 kW		4P - D90SD 1380 RPM				
		6P - D90LD 910 RPM				
$n_2$ rpm	Actual Ratio i	$M_2$ Nm	$S_F$	Overhung Load (max.) N	Axial Load (max.) N	Product Code
73	18.78	139	6.13	9000	12000	PB3SBD4P011***
56	24.76	183	4.65	9000	12000	PB3SCD4P011***
44	31.64	234	3.64	9000	12000	PB3SDD4P011***
34	41.09	303	2.80	9000	12000	PB3SED4P011***
29	47.28	349	4.30	18000	16000	PB4SFD4P011***
29	47.28	349	2.43	9000	12000	PB3SFD4P011***
23	61.05	451	3.33	18000	16000	PB4SGD4P011***
23	61.05	451	1.89	9000	12000	PB3SGD4P011***
18	77.01	569	2.64	18000	16000	PB4SHD4P011***
18	77.01	569	1.49	9000	12000	PB3SHD4P011***
14	99.80	737	3.56	25000	20000	PB5SJD4P011***
14	100.96	745	2.01	18000	16000	PB4SJD4P011***
14	100.96	745	1.14	9000	12000	PB3SJD4P011***
11	127.12	939	2.80	25000	20000	PB5SKD4P011***
11	128.60	949	1.58	18000	16000	PB4SKD4P011***
11	128.60	949	*0.90	6450	12000	PB3SKD4P011***
9.0	153.61	1134	2.31	25000	20000	PB5SLD4P011***
8.9	155.40	1147	1.31	18000	16000	PB4SLD4P011***
7.2	127.12	1423	1.84	25000	20000	PB5SKD6P011***
7.1	128.60	1291	1.16	18000	16000	PB4SKD6P011***
5.9	153.61	1720	1.53	25000	20000	PB5SLD6P011***
5.9	155.40	1561	*0.96	14000	16000	PB4SLD6P011***

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either  $M_2$  or the value stated in the table above.

### Key

- $n_2$  Output Speed, rpm
- i Overall Ratio
- $M_2$  Output Torque Nm, Mechanical
- $S_F$  Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



### IMPORTANT

Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

<b>P<sub>1</sub> 1.5 kW</b>						
<b>4P - D90LD 1370 RPM</b>						
<b>6P - D100LD 935 RPM</b>						
<b>n<sub>2</sub></b>	<b>Actual</b>	<b>M<sub>2</sub></b>	<b>S<sub>F</sub></b>	<b>Overhung</b>	<b>Axial</b>	<b>Product Code</b>
<b>rpm</b>	<b>Ratio</b>	<b>Nm</b>		<b>Load</b>	<b>Load</b>	
	<b>i</b>			<b>(max.) N</b>	<b>(max.) N</b>	
73	18.78	191	4.46	9000	12000	PB3SBD4P015***
55	24.76	251	3.38	9000	12000	PB3SCD4P015***
43	31.64	321	2.65	9000	12000	PB3SDD4P015***
33	41.09	417	3.60	18000	16000	PB4SED4P015***
33	41.09	417	2.04	9000	12000	PB3SED4P015***
29	47.28	480	3.13	18000	16000	PB4SFD4P015***
29	47.28	480	1.77	9000	12000	PB3SFD4P015***
23	60.35	612	4.29	25000	20000	PB5SGD4P015***
22	61.05	619	2.42	18000	16000	PB4SGD4P015***
22	61.05	619	1.37	9000	12000	PB3SGD4P015***
18	76.13	772	3.40	25000	20000	PB5SHD4P015***
18	77.01	781	1.92	18000	16000	PB4SHD4P015***
18	77.01	781	1.09	9000	12000	PB3SHD4P015***
14	99.80	1012	2.59	25000	20000	PB5SJD4P015***
14	100.96	1024	1.46	18000	16000	PB4SJD4P015***
14	100.96	1024	0.83	3750	12000	PB3SJD4P015***
11.4	82.23	1222	3.43	34000	35000	PB6THD6P015***
11	127.12	1289	2.04	25000	20000	PB5SKD4P015***
11	128.60	1304	1.15	18000	16000	PB4SKD4P015***
8.9	153.61	1558	1.68	25000	20000	PB5SLD4P015***
8.6	109.11	1621	2.59	34000	35000	PB6TJD6P015***
8.8	155.40	1576	*0.95	13650	16000	PB4SLD4P015***
7.6	122.26	1817	4.20	42000	50000	PB7TKD6P015***
7.3	128.76	1913	2.19	34000	35000	PB6TKD6P015***
7.4	127.12	1889	1.39	25000	20000	PB5SKD6P015***
7.3	128.60	1714	*0.88	10800	16000	PB4SKD6P015***
6.4	145.35	2160	3.55	42000	50000	PB7TLD6P015***
6.1	153.61	2283	1.15	25000	20000	PB5SLD6P015***
6.1	153.08	2275	1.84	34000	35000	PB6TLD6P015***

### Key

n<sub>2</sub> Output Speed, rpm  
 i Overall Ratio  
 M<sub>2</sub> Output Torque Nm,  
 Mechanical  
 S<sub>F</sub> Service Factor,  
 Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.

\* Max. Standard Plug-in Shaft Torque Nm

<b>PB35</b>	<b>PB40</b>	<b>PB50</b>	<b>PB60</b>	<b>PB70</b>	<b>PB80</b>
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.



### IMPORTANT

Units to ATEX approval must be selected with a minimum service factor of 1.25.



## RENOLD PM Series - PB Type - Motorised - Selection Data

P <sub>1</sub> 2.2 kW						
4P - D100LD 1430 RPM						
6P - D112MD 945 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio			Load	Load	
	i	Nm		(max.) N	(max.) N	
76	18.78	268	3.18	9000	12000	PB3SBD4P022***
58	24.76	353	3.81	18000	16000	PB4SCD4P022***
58	24.76	353	2.41	9000	12000	PB3SCD4P022***
45	31.64	451	3.21	18000	16000	PB4SDD4P022***
45	31.64	451	1.89	9000	12000	PB3SDD4P022***
35	41.09	586	2.56	18000	16000	PB4SED4P022***
35	41.09	586	1.45	9000	12000	PB3SED4P022***
31	46.74	666	3.94	25000	20000	PB5SFD4P022***
30	47.28	674	2.23	18000	16000	PB4SFD4P022***
30	47.28	674	1.26	9000	12000	PB3SFD4P022***
24	60.35	860	3.05	25000	20000	PB5SGD4P022***
23	61.05	870	1.72	18000	16000	PB4SGD4P022***
23	61.05	870	*0.98	8700	12000	PB3SGD4P022***
19	76.13	1085	2.42	25000	20000	PB5SHD4P022***
19	77.01	1097	1.37	18000	16000	PB4SHD4P022***
17	82.23	1172	3.65	34000	35000	PB6THD4P022***
14	99.80	1422	1.85	25000	20000	PB5SJD4P022***
14	100.96	1439	1.04	16100	16000	PB4SJD4P022***
13	109.11	1555	2.75	34000	35000	PB6TJD4P022***
11	128.76	1835	2.33	34000	35000	PB6TKD4P022***
11	127.12	1812	1.45	25000	20000	PB5SKD4P022***
11	128.60	1833	*0.82	7700	16000	PB4SKD4P022***
10	145.35	2071	3.65	42000	50000	PB7TLD4P022***
9.3	153.61	2189	1.20	25000	20000	PB5SLD4P022***

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.

# Consult Renold Gears Technical Dept.

P <sub>1</sub> 2.2 kW (cont)						
4P - D100LD 1430 RPM						
6P - D112MD 945 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio			Load	Load	
	i	Nm		(max.) N	(max.) N	
9	153.08	2181	1.96	34000	35000	PB6TLD4P022***
7.7	122.26	2636	2.93	42000	50000	PB7TKD6P022***
7.3	128.76	2777	1.53	34000	35000	PB6TKD6P022***
7.4	127.12	2741	*0.96	15800	20000	PB5SKD6P022***
6.5	145.35	3134	2.54	42000	50000	PB7TLD6P022***
6.2	153.61	3312	*0.79	#	20000	PB5SLD6P022***
6.2	153.08	3301	1.28	34000	35000	PB6TLD6P022***

### Key

- n<sub>2</sub> Output Speed, rpm
- i Overall Ratio
- M<sub>2</sub> Output Torque Nm, Mechanical
- S<sub>F</sub> Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

P <sub>1</sub> 3.0 kW						
4P - D100LXD 1400 RPM						
6P - D132SD 960 RPM						
n <sub>2</sub>	Actual Ratio	M <sub>2</sub>	S <sub>F</sub>	Overhung Load	Axial Load	Product Code
rpm	i	Nm		(max.) N	(max.) N	
75	18.78	373	3.29	18000	16000	PB4SBD4P030***
75	18.78	373	2.28	9000	12000	PB3SBD4P030***
57	24.76	491	2.75	18000	16000	PB4SCD4P030***
57	24.76	491	1.73	9000	12000	PB3SCD4P030***
45	31.27	621	4.23	25000	20000	PB5SDD4P030***
44	31.64	628	2.32	18000	16000	PB4SDD4P030***
44	31.64	628	1.35	9000	12000	PB3SDD4P030***
34	40.62	806	3.26	25000	20000	PB5SED4P030***
34	41.09	816	1.84	18000	16000	PB4SED4P030***
34	41.09	816	1.04	9000	12000	PB3SED4P030***
30	46.74	928	2.83	25000	20000	PB5SFD4P030***
30	47.28	939	1.60	18000	16000	PB4SFD4P030***
30	47.28	939	0.91	6750	12000	PB3SFD4P030***
27	52.35	1039	4.03	34000	35000	PB6TFD4P030***
23	60.35	1198	2.19	25000	20000	PB5SGD4P030***
23	61.05	1212	1.24	18000	16000	PB4SGD4P030***
22	64.69	1284	3.26	34000	35000	PB6TGD4P030***
18	76.13	1511	1.74	25000	20000	PB5SHD4P030***
18	77.01	1529	*0.98	14500	16000	PB4SHD4P030***
17	82.23	1632	2.56	34000	35000	PB6THD4P030***
14	99.80	1981	1.33	25000	20000	PB5SJD4P030***
14	103.60	2056	3.59	42000	50000	PB7TJD4P030***
13	109.11	2166	1.93	34000	35000	PB6TJD4P030***
11	122.26	2427	3.04	42000	50000	PB7TKD4P030***

P <sub>1</sub> 3.0 kW (cont)						
4P - D100LD 1430 RPM						
6P - D112MD 945 RPM						
n <sub>2</sub>	Actual Ratio	M <sub>2</sub>	S <sub>F</sub>	Overhung Load	Axial Load	Product Code
rpm	i	Nm		(max.) N	(max.) N	
11	128.76	2556	1.64	34000	35000	PB6TKD4P030***
11	127.12	2523	1.04	19400	20000	PB5SKD4P030***
10	145.35	2885	2.56	42000	50000	PB7TLD4P030***
9.1	153.61	3049	*0.86	9300	20000	PB5SLD4P030***
9.1	153.08	3038	1.38	34000	35000	PB6TLD4P030***
8.0	120.37	3484	3.31	55000	55000	PB8TKD6P030***
7.9	122.26	3539	2.21	42000	50000	PB7TKD6P030***
7.5	128.76	3727	1.16	34000	35000	PB6TKD6P030***
6.7	143.10	4142	2.80	55000	55000	PB8TLD6P030***
6.6	145.35	4207	1.92	42000	50000	PB7TLD6P030***
6.3	153.08	4431	*0.97	24000	35000	PB6TLD6P030***

### Key

- n<sub>2</sub> Output Speed, rpm
- i Overall Ratio
- M<sub>2</sub> Output Torque Nm, Mechanical
- S<sub>F</sub> Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.



**IMPORTANT** Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

P <sub>1</sub> 4.0 kW						
4P - D112MD 1430 RPM						
6P - D132MD 955 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio	Nm		Load	Load	
	i			(max.) N	(max.) N	
76	18.78	487	2.51	18000	16000	PB4SBD4P040***
76	18.78	487	1.75	9000	12000	PB3SBD4P040***
58	24.48	634	4.14	25000	20000	PB5SCD4P040***
58	24.76	642	2.10	18000	16000	PB4SCD4P040***
58	24.76	642	1.32	9000	12000	PB3SCD4P040***
46	31.27	810	3.24	25000	20000	PB5SDD4P040***
45	31.64	820	1.76	18000	16000	PB4SDD4P040***
45	31.64	820	1.04	9000	12000	PB3SDD4P040***
35	40.62	1052	2.49	25000	20000	PB5SED4P040***
35	41.09	1065	1.41	18000	16000	PB4SED4P040***
35	41.09	1065	*0.80	#	12000	PB3SED4P040***
34	41.66	1079	3.96	34000	35000	PB6TED4P040***
31	46.74	1211	2.17	25000	20000	PB5SFD4P040***
30	47.28	1225	1.22	18000	16000	PB4SFD4P040***
27	52.35	1356	3.15	34000	35000	PB6TFD4P040***
24	60.35	1564	1.68	25000	20000	PB5SGD4P040***
23	61.05	1582	*0.95	13500	16000	PB4SGD4P040***
22	64.69	1676	2.55	34000	35000	PB6TGD4P040***
19	76.13	1973	1.33	25000	20000	PB5SHD4P040***
18	78.07	2023	3.76	42000	50000	PB7THD4P040***
17	82.23	2131	2.01	34000	35000	PB6THD4P040***
14	99.80	2586	1.02	18400	20000	PB5SJD4P040***
14	103.60	2684	2.82	42000	50000	PB7TJD4P040***
13	109.11	2827	1.51	34000	35000	PB6TJD4P040***

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.

# Consult Renold Gears Technical Dept.

P <sub>1</sub> 4.0 kW (cont)						
4P - D112MD 1430 RPM						
6P - D132MD 955 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio	Nm		Load	Load	
	i			(max.) N	(max.) N	
12	122.26	3168	2.38	42000	50000	PB7TKD4P040***
11	128.76	3336	1.28	34000	35000	PB6TKD4P040***
11	127.12	3294	*0.80	#	20000	PB5SKD4P040***
10	143.10	3708	3.07	55000	55000	PB8TLD4P040***
10	145.35	3766	2.01	42000	50000	PB7TLD4P040***
9.3	153.08	3966	1.08	31000	35000	PB6TLD4P040***
7.9	120.37	4670	2.46	55000	55000	PB8TKD6P040***
7.8	122.26	4743	1.64	42000	50000	PB7TKD6P040***
7.4	128.76	4996	*0.86	11600	35000	PB6TKD6P040***
6.7	143.10	5552	2.08	55000	55000	PB8TLD6P040***
6.6	145.35	5639	1.43	42000	50000	PB7TLD6P040***

### Key

n<sub>2</sub> Output Speed, rpm

i Overall Ratio

M<sub>2</sub> Output Torque Nm, Mechanical

S<sub>F</sub> Service Factor, Mechanical

For details of unit designation code see page 13

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

$P_1$ 5.5 kW		4P - D132SD 1435 RPM 6P - D132MXD 955 RPM				
$n_2$	Actual Ratio	$M_2$	$S_F$	Overhung Load	Axial Load	Product Code
rpm	i	Nm		(max.) N	(max.) N	
77	18.57	659	3.76	25000	20000	PB5SBD4P055***
76	18.78	667	1.82	18000	16000	PB4SBD4P055***
76	18.78	667	1.27	9000	12000	PB3SBD4P055***
59	24.48	869	3.02	25000	20000	PB5SCD4P055***
58	24.76	879	1.52	18000	16000	PB4SCD4P055***
58	24.76	879	0.97	8450	12000	PB3SCD4P055***
46	31.27	1110	2.36	25000	20000	PB5SDD4P055***
45	31.64	1123	1.29	18000	16000	PB4SDD4P055***
43	33.35	1184	3.58	34000	35000	PB6TDD4P055***
35	40.62	1442	1.82	25000	20000	PB5SED4P055***
35	41.09	1459	1.03	15800	16000	PB4SED4P055***
34	41.66	1479	2.90	34000	35000	PB6TED4P055***
31	46.74	1659	1.58	25000	20000	PB5SFD4P055***
30	47.28	1679	*0.89	11500	16000	PB4SFD4P055***
29	49.71	1765	4.40	42000	50000	PB7TFD4P055***
27	52.35	1859	2.31	34000	35000	PB6TFD4P055***
23	61.42	2181	3.54	42000	50000	PB7TGD4P055***
24	60.35	2142	1.23	25000	20000	PB5SGD4P055***
22	64.69	2297	1.87	34000	35000	PB6TGD4P055***
19	76.13	2703	*0.97	16500	20000	PB5SHD4P055***
18	78.07	2772	2.76	42000	50000	PB7THD4P055***
17	82.23	2919	1.47	34000	35000	PB6THD4P055***
14	102.00	3621	3.11	55000	55000	PB8TJD4P055***
14	103.60	3678	2.07	42000	50000	PB7TJD4P055***

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either  $M_2$  or the value stated in the table above.

$P_1$ 5.5 kW (cont)		4P - D132SD 1435 RPM 6P - D132MXD 955 RPM				
$n_2$	Actual Ratio	$M_2$	$S_F$	Overhung Load	Axial Load	Product Code
rpm	i	Nm		(max.) N	(max.) N	
13	109.11	3874	1.11	32000	35000	PB6TJD4P055***
12	120.37	4273	2.66	55000	55000	PB8TKD4P055***
12	122.26	4340	1.74	42000	50000	PB7TKD4P055***
11	128.76	4571	*0.94	21000	35000	PB6TKD4P055***
10	143.10	5080	2.25	55000	55000	PB8TLD4P055***
10	145.35	5160	1.47	42000	50000	PB7TLD4P055***
9.4	153.08	5435	*0.79	3000	35000	PB6TLD4P055***
7.9	120.37	6421	1.79	55000	55000	PB8TKD6P055***
7.8	122.26	6522	1.20	42000	50000	PB7TKD6P055***
6.7	143.10	7634	1.51	55000	55000	PB8TLD6P055***
6.6	145.35	7754	1.04	37500	50000	PB7TLD6P055***

### Key

- $n_2$  Output Speed, rpm
- i Overall Ratio
- $M_2$  Output Torque Nm, Mechanical
- $S_F$  Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



**IMPORTANT** Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

P <sub>1</sub> 7.5 kW							4P - D132SD 1435 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio	Nm		Load	Load		rpm	Ratio	Nm		Load	Load	
	i			(max.) N	(max.) N			i			(max.) N	(max.) N	
77	18.57	899	2.76	25000	20000	PB5SBD4P075***							
76	18.78	909	1.34	18000	16000	PB4SBD4P075***							
76	18.78	909	0.93	7700	12000	PB3SBD4P075***							
53	27.05	1310	3.18	34000	35000	PB6TCD4P075***							
59	24.48	1185	2.22	25000	20000	PB5SCD4P075***							
58	24.76	1199	1.12	18000	16000	PB4SCD4P075***							
46	31.27	1514	1.73	25000	20000	PB5SDD4P075***							
45	31.64	1532	0.94	14400	16000	PB4SDD4P075***							
43	33.35	1615	2.62	34000	35000	PB6TDD4P075***							
35	40.62	1966	1.33	25000	20000	PB5SED4P075***							
36	39.56	1915	4.05	42000	50000	PB7TED4P075***							
34	41.66	2017	2.12	34000	35000	PB6TED4P075***							
29	49.71	2407	3.23	42000	50000	PB7TFD4P075***							
27	52.35	2534	1.69	34000	35000	PB6TFD4P075***							
23	61.42	2973	2.60	42000	50000	PB7TGD4P075***							
22	64.69	3132	1.37	34000	35000	PB6TGD4P075***							
19	76.87	3721	3.00	55000	55000	PB8THD4P075***							
18	78.07	3780	2.02	42000	50000	PB7THD4P075***							
17	82.23	3981	1.08	30800	35000	PB6THD4P075***							
14	102.00	4938	2.28	55000	55000	PB8TJD4P075***							
14	103.60	5015	1.51	42000	50000	PB7TJD4P075***							

P <sub>1</sub> 7.5 kW (cont)							4P - D132SD 1435 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio	Nm		Load	Load		rpm	Ratio	Nm		Load	Load	
	i			(max.) N	(max.) N			i			(max.) N	(max.) N	
13	109.11	5282	*0.81	2640	35000	PB6TJD4P075***							
12	120.37	5827	1.95	55000	55000	PB8TKD4P075***							
12	122.26	5919	1.28	42000	50000	PB7TKD4P075***							
10	143.10	6928	1.65	55000	55000	PB8TLD4P075***							
10	145.35	7037	1.08	42000	50000	PB7TLD4P075***							

### Key

- n<sub>2</sub> Output Speed, rpm
- i Overall Ratio
- M<sub>2</sub> Output Torque Nm, Mechanical
- S<sub>F</sub> Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

$P_1$ 11.0 kW		4P - D160MD 1450 RPM				
$n_2$ rpm	Actual Ratio i	$M_2$ Nm	$S_F$	Overhung Load (max.) N	Axial Load (max.) N	Product Code
78	18.57	1305	1.89	25000	20000	PB5SBD4P110***
69	21.05	1479	2.81	34000	35000	PB6TBD4P110***
59	24.48	1720	1.53	25000	20000	PB5SCD4P110***
56	25.69	1805	4.22	42000	50000	PB7TCD4P110***
54	27.05	1901	2.22	34000	35000	PB6TCD4P110***
46	31.27	2198	1.19	23900	20000	PB5SDD4P110***
46	31.66	2225	3.48	42000	50000	PB7TDD4P110***
43	33.35	2343	1.83	34000	35000	PB6TDD4P110***
36	40.62	2854	*0.92	13700	20000	PB5SED4P110***
37	39.56	2780	2.82	42000	50000	PB7TED4P110***
35	41.66	2927	1.48	34000	35000	PB6TED4P110***
30	48.94	3439	3.21	55000	55000	PB8TFD4P110***
29	49.71	3493	2.25	42000	50000	PB7TFD4P110***
28	52.35	3679	1.18	34000	35000	PB6TFD4P110***
24	60.47	4249	2.62	55000	55000	PB8TGD4P110***
24	61.42	4316	1.81	42000	50000	PB7TGD4P110***
22	64.69	4546	*0.95	21500	35000	PB6TGD4P110***
19	76.87	5402	2.09	55000	55000	PB8THD4P110***
19	78.07	5486	1.41	42000	50000	PB7THD4P110***
18	82.23	5778	*0.75	#	35000	PB6THD4P110***
14	102.00	7167	1.59	55000	55000	PB8TJD4P110***
14	103.60	7280	1.05	42000	50000	PB7TJD4P110***
12	120.37	8458	1.36	55000	55000	PB8TKD4P110***
12	122.26	8591	*0.89	24200	50000	PB7TKD4P110***
10	143.10	10056	1.15	55000	55000	PB8TLD4P110***

### Key

- $n_2$  Output Speed, rpm
- i Overall Ratio
- $M_2$  Output Torque Nm, Mechanical
- $S_F$  Service Factor, Mechanical

For details of unit designation code see page 13.


The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either  $M_2$  or the value stated in the table above.

# Consult Renold Gears Technical Dept.



**IMPORTANT** Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

P <sub>1</sub> 15.0 kW							4P - D160LD 1460 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio	Nm		Load	Load		rpm	Ratio	Nm		Load	Load	
	i			(max.) N	(max.) N						(max.) N	(max.) N	
79	18.57	1767	1.39	25000	20000	PB5SBD4P150***							
73	19.98	1901	3.97	42000	50000	PB7TBD4P150***							
69	21.05	2003	2.09	34000	35000	PB6TBD4P150***							
60	24.48	2329	1.13	22200	20000	PB5SCD4P150***							
57	25.69	2445	3.14	42000	50000	PB7TCD4P150***							
54	27.05	2574	1.65	34000	35000	PB6TCD4P150***							
47	31.27	2976	*0.88	10900	20000	PB5SDD4P150***							
46	31.66	3013	2.59	42000	50000	PB7TDD4P150***							
44	33.35	3174	1.36	34000	35000	PB6TDD4P150***							
37	38.95	3707	2.97	55000	55000	PB8TED4P150***							
37	39.56	3765	2.10	42000	50000	PB7TED4P150***							
35	41.66	3965	1.10	31000	35000	PB6TED4P150***							
30	48.94	4657	2.38	55000	55000	PB8TFD4P150***							
29	49.71	4731	1.67	42000	50000	PB7TFD4P150***							
28	52.35	4982	*0.88	11900	35000	PB6TFD4P150***							
24	60.47	5755	1.95	55000	55000	PB8TGD4P150***							
24	61.42	5845	1.34	42000	50000	PB7TGD4P150***							
19	76.87	7315	1.55	55000	55000	PB8THD4P150***							
19	78.07	7430	1.05	41900	50000	PB7THD4P150***							
14	102.00	9707	1.26	55000	55000	PB8TJD4P150***							
14	103.60	9859	*0.98	#	50000	PB7TJD4P150***							
12	120.37	11455	1.01	40800	55000	PB8TKD4P150***							
10	143.10	13618	*0.85	#	55000	PB8TLD4P150***							

P <sub>1</sub> 18.5 kW							4P - D180MD 1470 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio	Nm		Load	Load		rpm	Ratio	Nm		Load	Load	
	i			(max.) N	(max.) N						(max.) N	(max.) N	
74	19.98	2329	3.26	42000	50000	PB7TBD4P185***							
70	21.05	2454	1.72	34000	35000	PB6TBD4P185***							
57	25.69	2995	2.58	42000	50000	PB7TCD4P185***							
54	27.05	3153	1.36	34000	35000	PB6TCD4P185***							
47	31.18	3635	3.00	55000	55000	PB8TDD4P185***							
46	31.66	3691	2.13	42000	50000	PB7TDD4P185***							
44	33.35	3888	1.12	32200	35000	PB6TDD4P185***							
38	38.95	4541	2.44	55000	55000	PB8TED4P185***							
37	39.56	4612	1.72	42000	50000	PB7TED4P185***							
35	41.66	4856	*0.90	15000	35000	PB6TED4P185***							
30	48.94	5705	1.96	55000	55000	PB8TFD4P185***							
30	49.71	5795	1.37	42000	50000	PB7TFD4P185***							
24	60.47	7049	1.60	55000	55000	PB8TGD4P185***							
24	61.42	7160	1.10	42000	50000	PB7TGD4P185***							
19	76.87	8961	1.28	55000	55000	PB8THD4P185***							
19	78.07	9101	*0.86	13500	50000	PB7THD4P185***							
14	102.00	11890	*0.97	33600	55000	PB8TJD4P185***							
12	120.37	14032	*0.83	#	55000	PB8TKD4P185***							

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.


# Consult Renold Gears Technical Dept.

### Key

- n<sub>2</sub> Output Speed, rpm
- i Overall Ratio
- M<sub>2</sub> Output Torque Nm, Mechanical
- S<sub>F</sub> Service Factor, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



**IMPORTANT** Units to ATEX approval must be selected with a minimum service factor of 1.25.



## RENOLD PM Series - PB Type - Motorised - Selection Data

P <sub>1</sub> 22.0 kW							4P - D180LD 1465 RPM						
n <sub>2</sub>	Actual Ratio	M <sub>2</sub>	S <sub>F</sub>	Overhung Load	Axial Load	Product Code							
rpm	i	Nm		(max.) N	(max.) N								
73	19.98	2779	2.73	42000	50000	PB7TBD4P220***							
70	21.05	2928	1.43	34000	35000	PB6TBD4P220***							
58	25.29	3518	3.01	55000	55000	PB8TCD4P220***							
57	25.69	3573	2.15	42000	50000	PB7TCD4P220***							
54	27.05	3763	1.13	34000	35000	PB6TCD4P220***							
47	31.18	4337	2.51	55000	55000	PB8TDD4P220***							
46	31.66	4404	1.78	42000	50000	PB7TDD4P220***							
44	33.35	4639	*0.93	19700	35000	PB6TDD4P220***							
38	38.95	5418	2.04	55000	55000	PB8TED4P220***							
37	39.56	5503	1.44	42000	50000	PB7TED4P220***							
30	48.94	6808	1.64	55000	55000	PB8TFD4P220***							
29	49.71	6915	1.15	42000	50000	PB7TFD4P220***							
24	60.47	8411	1.34	55000	55000	PB8TGD4P220***							
24	61.42	8544	*0.92	25000	50000	PB7TGD4P220***							
19	76.87	10693	1.06	51900	55000	PB8THD4P220***							
14	102.00	14188	*0.81	#	55000	PB8TJD4P220***							

P <sub>1</sub> 37.0 kW							4P - D225SD 1485 RPM						
n <sub>2</sub>	Actual Ratio	M <sub>2</sub>	S <sub>F</sub>	Overhung Load	Axial Load	Product Code							
rpm	i	Nm		(max.) N	(max.) N								
75	19.67	4540	2.21	55000	55000	PB8TBD4P370***							
74	19.98	4611	1.67	42000	50000	PB7TBD4P370***							
71	21.05	4858	*0.88	31200	35000	PB6TBD4P370***							
59	25.29	5837	1.84	55000	55000	PB8TCD4P370***							
58	25.69	5929	1.32	42000	50000	PB7TCD4P370***							
48	31.18	7196	1.53	55000	55000	PB8TDD4P370***							
47	31.66	7307	1.09	42000	50000	PB7TDD4P370***							
38	38.95	8989	1.24	55000	55000	PB8TED4P370***							
38	39.56	9130	*0.88	#	50000	PB7TED4P370***							

P <sub>1</sub> 30.0 kW							4P - D200LD 1480 RPM						
n <sub>2</sub>	Actual Ratio	M <sub>2</sub>	S <sub>F</sub>	Overhung Load	Axial Load	Product Code							
rpm	i	Nm		(max.) N	(max.) N								
75	19.67	3693	2.71	55000	55000	PB8TBD4P300***							
74	19.98	3751	2.04	42000	50000	PB7TBD4P300***							
70	21.05	3952	1.07	31200	35000	PB6TBD4P300***							
59	25.29	4748	2.26	55000	55000	PB8TCD4P300***							
58	25.69	4824	1.61	42000	50000	PB7TCD4P300***							
55	27.05	5079	*0.85	9300	35000	PB6TCD4P300***							
47	31.18	5854	1.87	55000	55000	PB8TDD4P300***							
47	31.66	5944	1.33	42000	50000	PB7TDD4P300***							
38	38.95	7313	1.52	55000	55000	PB8TED4P300***							
37	39.56	7428	1.08	41900	50000	PB7TED4P300***							

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.


# Consult Renold Gears Technical Dept.

### Key

- n<sub>2</sub> Output Speed, rpm
- i Overall Ratio
- M<sub>2</sub> Output Torque Nm, Mechanical
- S<sub>F</sub> Service Factory, Mechanical

For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



**IMPORTANT** Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised - Selection Data

P <sub>1</sub> 45.0 kW							4P - D225MD 1480 RPM							
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	
rpm	Ratio	Nm		Load	Load		rpm	Ratio	Nm		Load	Load		
	i			(max.) N	(max.) N									
75	19.67	5540	1.80	55000	55000	PB8TBD4P450***	75	19.67	9233	1.08	55000	55000	PB8TBD4P750***	
74	19.98	5627	1.36	42000	50000	PB7TBD4P450***	74	19.98	9379	*0.82	#	50000	50000	PB7TBD4P750***
59	25.29	7123	1.50	55000	55000	PB8TCD4P450***	59	25.29	11871	*0.90	34400	55000	PB8TCD4P750***	
58	25.69	7235	1.07	42000	50000	PB7TCD4P450***								
47	31.18	8782	1.25	55000	55000	PB8TDD4P450***								
47	31.66	8917	*0.89	17700	50000	PB7TDD4P450***								
38	38.95	10970	*1.02	36000	55000	PB8TED4P450***								

P <sub>1</sub> 75.0 kW							D280SD 1480 RPM							
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	
rpm	Ratio	Nm		Load	Load		rpm	Ratio	Nm		Load	Load		
	i			(max.) N	(max.) N									
75	19.67	5540	1.80	55000	55000	PB8TBD4P450***	75	19.67	9233	1.08	55000	55000	PB8TBD4P750***	
74	19.98	5627	1.36	42000	50000	PB7TBD4P450***	74	19.98	9379	*0.82	#	50000	50000	PB7TBD4P750***
59	25.29	7123	1.50	55000	55000	PB8TCD4P450***	59	25.29	11871	*0.90	34400	55000	PB8TCD4P750***	
58	25.69	7235	1.07	42000	50000	PB7TCD4P450***								
47	31.18	8782	1.25	55000	55000	PB8TDD4P450***								
47	31.66	8917	*0.89	17700	50000	PB7TDD4P450***								
38	38.95	10970	*1.02	36000	55000	PB8TED4P450***								

P <sub>1</sub> 55.0 kW							4P - D250MD 1480 RPM						
n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code	n <sub>2</sub>	Actual	M <sub>2</sub>	S <sub>F</sub>	Overhung	Axial	Product Code
rpm	Ratio	Nm		Load	Load		rpm	Ratio	Nm		Load	Load	
	i			(max.) N	(max.) N								
75	19.67	6771	1.48	55000	55000	PB8TBD4P550***	75	19.67	6771	1.48	55000	55000	PB8TBD4P550***
74	19.98	6878	1.11	42000	50000	PB7TBD4P550***	74	19.98	6878	1.11	42000	50000	PB7TBD4P550***
59	25.29	8705	1.23	55000	55000	PB8TCD4P550***	59	25.29	8705	1.23	55000	55000	PB8TCD4P550***
58	25.69	8843	*0.88	19200	50000	PB7TCD4P550***	58	25.69	8843	*0.88	19200	50000	PB7TCD4P550***
47	31.18	10733	1.02	40100	55000	PB8TDD4P550***	47	31.18	10733	1.02	40100	55000	PB8TDD4P550***
38	38.95	13408	*0.83	#	55000	PB8TED4P550***	38	38.95	13408	*0.83	#	55000	PB8TED4P550***

\* Max. Standard Plug-in Shaft Torque Nm

PB35	PB40	PB50	PB60	PB70	PB80
1045	1550	2700	4450	7950	11350

Overhung Load Capacity is that what can be applied along with the lower of either M<sub>2</sub> or the value stated in the table above.

# Consult Renold Gears Technical Dept.

### Key

- n<sub>2</sub> Output Speed, rpm
- i Overall Ratio
- M<sub>2</sub> Output Torque Nm, Mechanical
- S<sub>F</sub> Service Factory, Mechanical

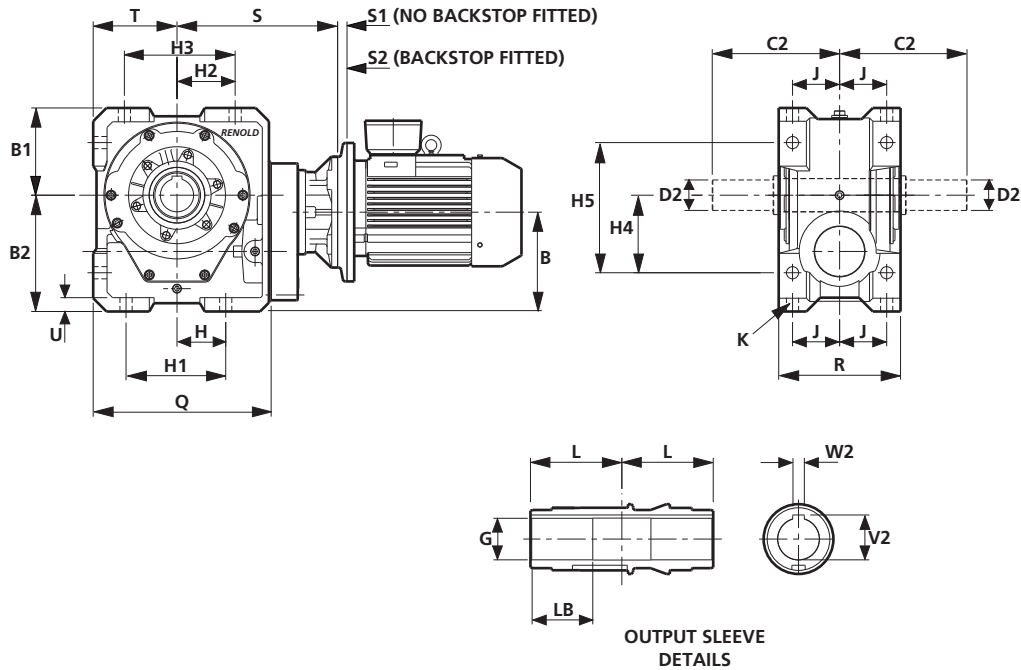
For details of unit designation code see page 13.

The overhung load shown above is based on the maximum motor Power being transmitted. For higher overhung loads consult Renold.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Motorised Unit - Dimensions



### PM Series - PB Motorised

UNIT REF	B	B1	B2	H	H1	H2	H3	H4	H5
PB35	162.0	140.0	180	60	135	85	160	120	205
PB40	179.3	157.5	210	88	180	105	200	140	235
PB50	183.9	195.0	240	88	180	125	230	160	280
PB60	239.6	225.0	280	120	235	145	270	190	340
PB70	269.0	255.5	335	140	290	160	310	240	412
PB80	278.8	280.0	370	140	310	170	340	256	460

UNIT REF	J	K	Q	R	S	S	T	U
<b>Motor</b>					D80-D200	D225-D280		
PB35	75	17.0	274	186	264	-	130	25
PB40	85	21.5	321	220	290	-	151	25
PB50	100	21.5	365	250	310	-	175	30
PB60	125	25.5	418	305	365	445	200	35
PB70	150	25.5	458	360	380	460	225	35
PB80	150	25.5	503	360	404	484	246	35

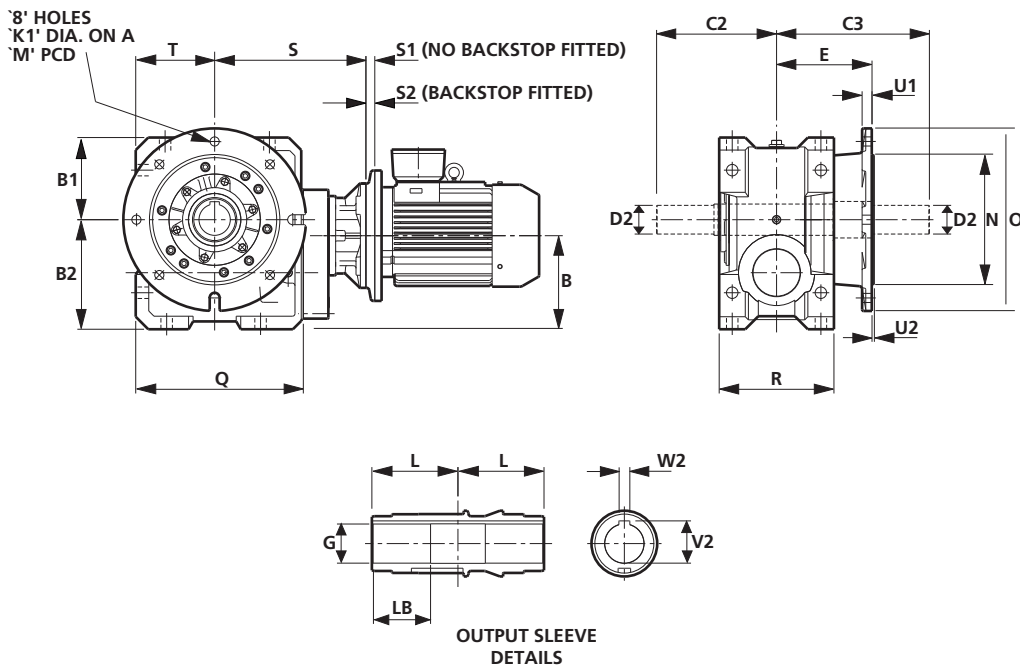
UNIT REF	D80D		D90D		D100D		D112D		D132D		D160D		D180D		D200D		D225D		D250D	
	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2
PB35	0	n/a	0	n/a	11	81	11	81	30	125	-	-	-	-	-	-	-	-	-	-
PB40	0	n/a	0	n/a	11	81	11	81	30	125	-	-	-	-	-	-	-	-	-	-
PB50	0	n/a	0	n/a	11	81	11	81	30	125	41	171	-	-	-	-	-	-	-	-
PB60	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	-	-
PB70	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	33	n/a
PB80	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	33	n/a

UNIT REF	G	L	LB	V2	W2
PB35	40F7	103	65	43.3	12Js9
PB40	50F7	110	75	53.8	14Js9
PB50	60F7	130	95	64.4	18Js9
PB60	70F7	155	130	74.9	20Js9
PB70	90F7	174	125	95.4	25Js9
PB80	100F7	174	115	106.4	28Js9

### Plug-in Output Shaft

UNIT REF	C2	D2-SE	D2-DE
PB35	190	40k6	39k6
PB40	220	50k6	49k6
PB50	260	60m6	59m6
PB60	305	70m6	69m6
PB70	355	85m6	85m6
PB80	355	95m6	95m6

## RENOLD PM Series - PB Type - Motorised Unit - Dimensions



### PM Series - PB Motorised - (Horizontal Flange Mounted)

UNIT REF	B	B1	B2	E	K1	M	N	O
PB35	162.0	140.0	180	154	13.5	265	230h8	300
PB40	179.3	157.5	210	183	17.5	300	250h8	350
PB50	183.9	195.0	240	197	17.5	350	300h8	400
PB60	239.6	225.0	280	215	17.5	400	350h8	450
PB70	269.0	255.5	335	248	17.5	500	450h8	550
PB80	278.8	280.0	370	248	17.5	500	450h8	550

UNIT REF	Q	R	S	S	T	U1	U2
<b>Motor</b>			D80-D200	D225-D280			
PB35	274	186	264	-	130	13	4
PB40	321	220	290	-	151	19	5
PB50	365	250	310	-	175	19	5
PB60	418	305	365	445	200	19	5
PB70	458	360	380	460	225	24	5
PB80	503	360	404	484	246	24	5

UNIT REF	D80D		D90D		D100D		D112D		D132D		D160D		D180D		D200D		D225D		D250D		D280D	
	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2
PB35	0	n/a	0	n/a	11	81	11	81	30	125	-	-	-	-	-	-	-	-	-	-	-	-
PB40	0	n/a	0	n/a	11	81	11	81	30	125	-	-	-	-	-	-	-	-	-	-	-	-
PB50	0	n/a	0	n/a	11	81	11	81	30	125	41	171	-	-	-	-	-	-	-	-	-	-
PB60	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	-	-	-	-
PB70	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	33	n/a	33	n/a
PB80	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	33	n/a	33	n/a

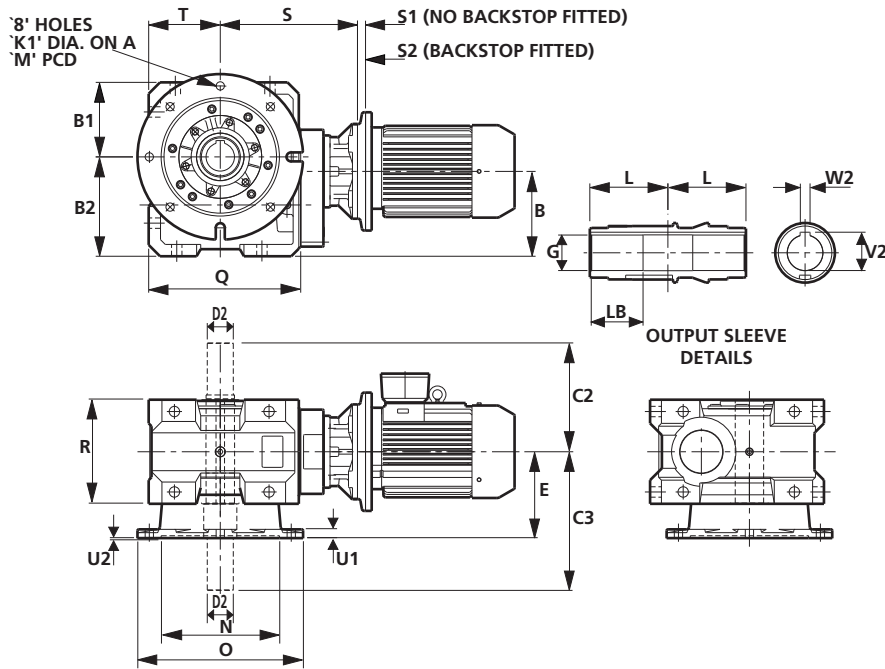
### Output Sleeve

UNIT REF	G	L	LB	V2	W2
PB35	40F7	103	65	43.3	12Js9
PB40	50F7	110	75	53.8	14Js9
PB50	60F7	130	95	64.4	18Js9
PB60	70F7	155	130	74.9	20Js9
PB70	90F7	174	125	95.4	25Js9
PB80	100F7	174	115	106.4	28Js9

### Plug-in Output Shaft

UNIT REF	C2	D2-SE	D2-DE
PB35	190	40k6	39k6
PB40	220	50k6	49k6
PB50	260	60m6	59m6
PB60	305	70m6	69m6
PB70	355	85m6	85m6
PB80	355	95m6	95m6

## RENOLD PM Series - PB Type - Motorised Unit - Dimensions



### PM Series - PB Motorised - (Vertical Skirt)

UNIT REF	B	B1	B2	E	K1	M	N	O
PB35	162.0	140.0	180	154	13.5	265	230h8	300
PB40	179.3	157.5	210	183	17.5	300	250h8	350
PB50	183.9	195.0	240	197	17.5	350	300h8	400
PB60	239.6	225.0	280	215	17.5	400	350h8	450
PB70	269.0	255.5	335	248	17.5	500	450h8	550
PB80	278.8	280.0	370	248	17.5	500	450h8	550

UNIT REF	P	Q	R	S	S	T	U1	U3
<b>Motor</b>				D80-D200	D225-D280			
PB35	134	274	186	264	-	130	13	5
PB40	159	321	220	290	-	151	19	6
PB50	184	365	250	310	-	175	19	6
PB60	199	418	305	365	445	200	19	6
PB70	225	458	360	380	460	225	24	6
PB80	246	503	360	404	484	246	24	6

UNIT REF	D80D		D90D		D100D		D112D		D132D		D160D		D180D		D200D		D225D		D250D	
	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2
PB35	0	n/a	0	n/a	11	81	11	81	30	125	-	-	-	-	-	-	-	-	-	-
PB40	0	n/a	0	n/a	11	81	11	81	30	125	-	-	-	-	-	-	-	-	-	-
PB50	0	n/a	0	n/a	11	81	11	81	30	125	41	171	-	-	-	-	-	-	-	-
PB60	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	-	-
PB70	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	33	n/a
PB80	n/a	n/a	n/a	n/a	0	70	0	70	22	117	30	160	30	160	30	160	0	n/a	33	n/a

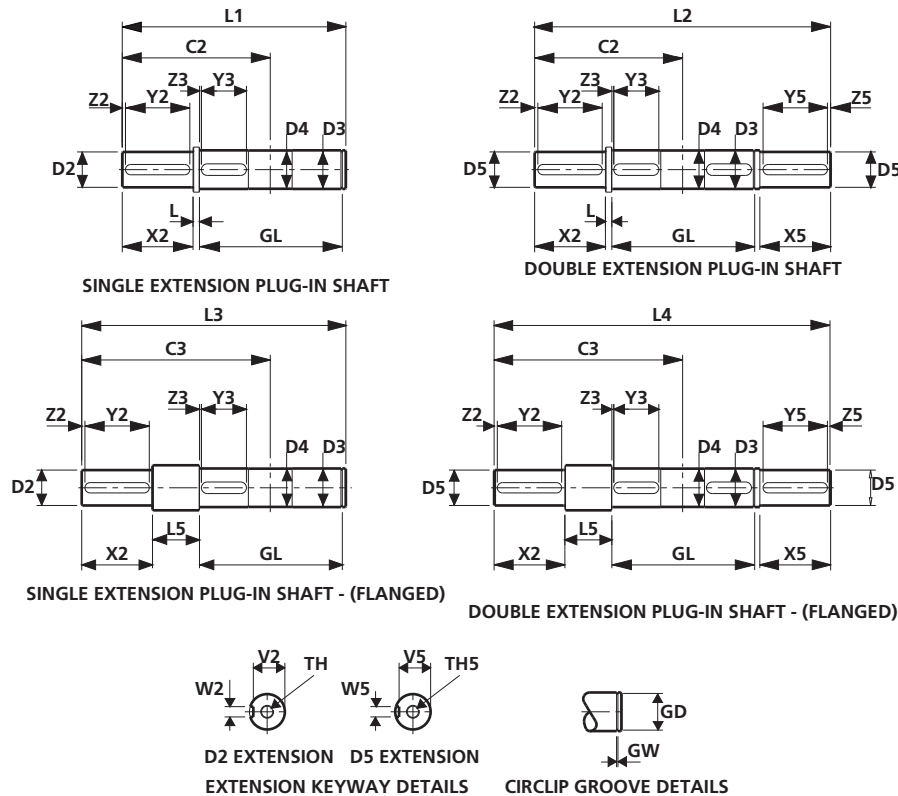
### Output Sleeve

UNIT REF	G	L	LB	V2	W2
PB35	40F7	103	65	43.3	12Js9
PB40	50F7	110	75	53.8	14Js9
PB50	60F7	130	95	64.4	18Js9
PB60	70F7	155	130	74.9	20Js9
PB70	90F7	174	125	95.4	25Js9
PB80	100F7	174	115	106.4	28Js9

### Plug-in Output Shaft

UNIT REF	C2	D2-SE	D2-DE
PB35	190	40k6	39k6
PB40	220	50k6	49k6
PB50	260	60m6	59m6
PB60	305	70m6	69m6
PB70	355	85m6	85m6
PB80	355	95m6	95m6

## RENOLD PM Series - PB Type - Output Shaft Dimensions



### Plug-in Shafts

UNIT REF	C2	C3	L	L1	L2	L3	L4	L5	GD	GL	GW
PB35	190	234	7	300.5	380	344.5	424	51	37.50	207.65	1.99
									37.25	207.60	1.85
PB40	220	283	10	337.5	440	400.5	503	73	47.00	222.15	2.29
									46.75	222.10	2.15
PB50	260	317	10	398.5	520	455.5	577	67	57.00	262.15	2.29
									56.7	262.10	2.15
PB60	305	355	10	469.5	610	519.5	660	60	67.00	312.65	2.79
									66.70	312.60	2.65
PB70	355	418	11	538.5	710	601.5	773	74	86.50	351.15	3.33
									86.15	351.10	3.15
PB80	355	418	11	538.5	710	601.5	773	74	96.50	351.15	3.33
									96.15	351.10	3.15

UNIT REF	D2	V2	W2	X2	Y2	Z2	TH	D3	Y3	Z3
PB35	40k6	35.00	12P9	80	70	5	M16x36	40h6	63	3
PB40	50k6	44.50	14P9	100	90	5	M16x36	50h6	80	3
PB50	60m6	53.00	18P9	120	110	5	M20x42	60h6	100	3
PB60	70m6	62.50	20P9	140	125	5	M20x42	70h6	125	3
PB70	85m6	76.00	22P9	170	160	5	M20x42	90h6	140	3
PB80	95m6	86.00	25P9	170	160	5	M24x50	100h6	125 *	3

UNIT REF	D4	D5	V5	W5	X5	Y5	Z5	TH5
PB35	38	39k6	34.00	12P9	80	70	5	M16x36
PB40	48	49k6	43.50	14P9	100	90	5	M16x36
PB50	58	59m6	52.00	18P9	120	110	5	M20x42
PB60	68	69m6	61.50	20P9	140	125	5	M20x42
PB70	88	85m6	76.00	22P9	170	160	5	M20x42
PB80	96	95m6	86.00	25P9	170	160	5	M24x50

\*Two Keys

## RENOLD PM Series - PB Type - Overhung/Axial Load Capacities

### PM SERIES PB - HELICAL/BEVEL/HELICAL

#### Overhung Load Capacities @ 1500 RPM Nominal Input Speed

Ratio	Output Speed	Gear Unit Size					
		PB35	PB40	PB50	PB60	PB70	PB80
20	75	9000	18000	20500	27700	35100	51100
25	60	9000	17900	17800	26900	33500	42400
32	47	9000	16300	17800	25900	31800	38600
40	38	9000	15000	17800	25100	30400	36500
50	30	9000	15000	17800	25100	30400	35000
63	24	9000	15000	17800	25100	31000	33300
80	19	9000	15000	17800	25100	32200	31100
100	15	9000	15000	17800	25100	32700	29200
125	12	9000	15000	17800	25100	33100	27900
160	9	9000	15000	17800	25100	32900	26500

- based on Gear Unit transmitting Mechanical Rating

### PM SERIES PB - HELICAL/BEVEL/HELICAL

#### Axial Load Capacities

Ratio	Output Speed	Gear Unit Size					
		PB35	PB40	PB50	PB60	PB70	PB80
20	75	12000	16000	20000	35000	50000	55000
25	60	12000	16000	20000	35000	50000	55000
32	47	12000	16000	20000	35000	50000	55000
40	38	12000	16000	20000	35000	50000	55000
50	30	12000	16000	20000	35000	50000	55000
63	24	12000	16000	20000	35000	50000	55000
80	19	12000	16000	20000	35000	50000	55000
100	15	12000	16000	20000	35000	50000	55000
125	12	12000	16000	20000	35000	50000	55000
160	9	12000	16000	20000	35000	50000	55000

- based on Gear Unit transmitting Mechanical Rating



**RENOLD PM Series - PB Type - Exact Ratio****PM Series PB Helical/Bevel/Helical Actual Ratios**

PB35/40							
R10	Helical		Bevel		Helical		Overall Ratio
	Pinion	Wheel	Pinion	Wheel	Pinion	Wheel	
20	51	51	11	38	16	87	18.78
25	44	58	11	38	16	87	24.76
32	38	64	11	38	16	87	31.64
40	32	70	11	38	16	87	41.09
50	29	73	11	38	16	87	47.28
63	24	78	11	38	16	87	61.05
80	20	82	11	38	16	87	77.01
100	16	86	11	38	16	87	100.96
125	13	89	11	38	16	87	128.60
160	11	91	11	38	16	87	155.40

PB50							
R10	Helical		Bevel		Helical		Overall Ratio
	Pinion	Wheel	Pinion	Wheel	Pinion	Wheel	
20	51	51	11	38	16	86	18.57
25	44	58	11	38	16	86	24.48
32	38	64	11	38	16	86	31.27
40	32	70	11	38	16	86	40.62
50	29	73	11	38	16	86	46.74
63	24	78	11	38	16	86	60.35
80	20	82	11	38	16	86	76.13
100	16	86	11	38	16	86	99.80
125	13	89	11	38	16	86	127.12
160	11	91	11	38	16	86	153.61

PB60							
R10	Helical		Bevel		Helical		Overall Ratio
	Pinion	Wheel	Pinion	Wheel	Pinion	Wheel	
20	38	43	11	37	17	94	21.05
25	33	48	11	37	17	94	27.05
32	29	52	11	37	17	94	33.35
40	25	56	11	37	17	94	41.66
50	27	76	11	37	17	94	52.35
63	23	80	11	37	17	94	64.69
80	19	84	11	37	17	94	82.23
100	15	88	11	37	17	94	109.11
125	13	90	11	37	17	94	128.76
160	13	107	11	37	17	94	153.08

PB70							
R10	Helical		Bevel		Helical		Overall Ratio
	Pinion	Wheel	Pinion	Wheel	Pinion	Wheel	
20	38	43	11	37	16	84	19.98
25	33	48	11	37	16	84	25.69
32	29	52	11	37	16	84	31.66
40	25	56	11	37	16	84	39.56
50	27	76	11	37	16	84	49.71
63	23	80	11	37	16	84	61.42
80	19	84	11	37	16	84	78.07
100	15	88	11	37	16	84	103.60
125	13	90	11	37	16	84	122.26
160	13	107	11	37	16	84	145.35

PB80							
R10	Helical		Bevel		Helical		Overall Ratio
	Pinion	Wheel	Pinion	Wheel	Pinion	Wheel	
20	38	43	11	36	16	85	19.67
25	33	48	11	36	16	85	25.29
32	29	52	11	36	16	85	31.18
40	25	56	11	36	16	85	38.95
50	27	76	11	36	16	85	48.94
63	23	80	11	36	16	85	60.47
80	19	84	11	36	16	85	76.87
100	15	88	11	36	16	85	102.00
125	13	90	11	36	16	85	120.37
160	13	107	11	36	16	85	143.10

### Mineral and Synthetic Oils

Nominal ratio: 20/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXSB***	PB4REDXXSB***	PB5REDXXSB***	PB6REDXXTB***	PB7REDXXTB***	PB8REDXXTB***
			Helical 51/51 Bevel 11/38 Helical 16/87 18.78	Helical 51/51 Bevel 11/38 Helical 16/87 18.78	Helical 51/51 Bevel 11/38 Helical 16/86 18.57	Helical 38/43 Bevel 11/37 Helical 17/94 21.05	Helical 38/43 Bevel 11/37 Helical 16/84 19.98	Helical 38/43 Bevel 11/36 Helical 16/85 19.67
1800	90.0	Actual Output Speed. rpm	95.8	95.8	96.9	85.5	90.1	91.5
		Input kW. Mechanical	8.79	11.7	24.2	38.1	73.7	94.7
		Output Torque Nm. Mechanical	850	1135	2315	4130	7580	9585
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	75.0	Actual Output Speed. rpm	79.9	79.9	80.8	71.3	75.1	76.3
		Input kW, Mechanical	7.33	10.3	21.4	33.0	62.9	83.4
		Output Torque Nm, Mechanical	850	1200	2450	4295	7755	10125
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	60.0	Actual Output Speed, rpm	63.9	63.9	64.6	57.0	60.1	61.0
		Input kW, Mechanical	5.86	8.86	18.2	26.8	51.1	71.3
		Output Torque Nm, Mechanical	850	1285	2615	4355	7875	10825
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	50.0	Actual Output Speed, rpm	53.2	53.2	53.9	47.5	50.1	50.8
		Input kW, Mechanical	4.89	7.79	15.3	22.6	43.0	60.8
		Output Torque Nm, Mechanical	850	1355	2625	4400	7965	11075
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	37.5	Actual Output Speed, rpm	39.9	39.9	40.4	35.6	37.5	38.1
		Input kW, Mechanical	3.66	6.38	11.4	17.2	32.8	46.4
		Output Torque Nm, Mechanical	850	1480	2615	4470	8100	11270
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	25.0	Actual Output Speed, rpm	26.6	26.6	26.9	23.8	25.0	25.4
		Input kW, Mechanical	2.44	4.31	7.63	11.5	21.8	31.6
		Output Torque Nm, Mechanical	850	1500	2625	4485	8070	11515
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	12.5	Actual Output Speed, rpm	13.3	13.3	13.5	11.9	12.5	12.7
		Input kW, Mechanical	1.22	2.16	3.82	5.75	10.7	16.3
		Output Torque Nm, Mechanical	850	1500	2625	4485	7910	11860
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.


## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 25/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXXSC***	PB4REDXXXSC***	PB5REDXXXSC***	PB6REDXXXTC***	PB7REDXXXTC***	PB8REDXXXTC***
			Helical 44/58 Bevel 11/38 Helical 16/87 24.76	Helical 44/58 Bevel 11/38 Helical 16/87 24.76	Helical 44/58 Bevel 11/38 Helical 16/86 24.48	Helical 33/48 Bevel 11/37 Helical 17/94 27.05	Helical 33/48 Bevel 11/37 Helical 16/84 25.69	Helical 33/48 Bevel 11/36 Helical 16/85 25.29
1800	72.0	Actual Output Speed, rpm	72.7	72.7	73.5	66.5	70.1	71.2
		Input kW, Mechanical	6.67	9.8	20.8	31.0	58.9	79.0
		Output Torque Nm, Mechanical	850	1255	2625	4310	7785	10275
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	60.0	Actual Output Speed, rpm	60.6	60.6	61.3	55.0	58.4	59.3
		Input kW, Mechanical	5.56	8.67	17.4	26.1	49.7	69.5
		Output Torque Nm, Mechanical	850	1325	2625	4360	7880	10855
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	48.0	Actual Output Speed, rpm	48.5	48.5	49.0	44.0	46.7	47.4
		Input kW, Mechanical	4.45	7.43	13.9	21.1	40.3	56.9
		Output Torque Nm, Mechanical	850	1420	2625	4415	7990	11110
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	40.0	Actual Output Speed, rpm	40.4	40.4	40.8	30.0	38.9	39.5
		Input kW, Mechanical	3.71	6.52	11.6	17.8	33.9	48.0
		Output Torque Nm, Mechanical	850	1495	2625	4460	8075	11235
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	30.0	Actual Output Speed, rpm	30.3	30.3	30.6	27.7	29.2	29.7
		Input kW, Mechanical	2.78	4.91	8.68	13.4	25.6	36.5
		Output Torque Nm, Mechanical	850	1500	2625	4485	8110	11415
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	20.0	Actual Output Speed, rpm	20.2	20.2	20.4	18.5	19.5	19.8
		Input kW, Mechanical	1.85	3.27	5.79	8.95	16.8	24.8
		Output Torque Nm, Mechanical	850	1500	2625	4485	7990	11640
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	10.0	Actual Output Speed, rpm	10.1	10.1	10.2	9.2	9.7	9.9
		Input kW, Mechanical	0.93	1.64	2.89	4.47	8.34	12.8
		Output Torque Nm, Mechanical	850	1500	2625	4485	7940	11955
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



**IMPORTANT** Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

#### Nominal ratio: 32/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PPB3REDXXXSD***	PB4REDXXXSD***	PB5REDXXXSD***	PB6REDXXXTD***	PB7REDXXXTD***	PB8REDXXXTD***
			Helical 38/64 Bevel 11/38 Helical 16/87 31.64	Helical 38/64 Bevel 11/38 Helical 16/87 31.64	Helical 38/64 Bevel 11/38 Helical 16/86 31.27	Helical 29/52 Bevel 11/37 Helical 17/94 33.35	Helical 29/52 Bevel 11/37 Helical 16/84 31.66	Helical 29/52 Bevel 11/36 Helical 16/85 31.18
1800	56.3	Actual Output Speed, rpm	56.9	56.9	57.6	54.0	56.9	57.7
		Input kW, Mechanical	5.22	8.29	16.3	25.5	48.6	68.6
		Output Torque Nm, Mechanical	850	1350	2625	4380	7925	11015
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	46.9	Actual Output Speed, rpm	47.4	47.4	48.0	45.0	47.4	48.1
		Input kW, Mechanical	4.35	7.29	13.6	21.5	41.0	57.9
		Output Torque Nm, Mechanical	850	1425	2625	4425	8015	11145
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	37.5	Actual Output Speed, rpm	37.9	37.9	38.4	36.0	37.9	38.5
		Input kW, Mechanical	3.48	6.14	10.9	17.4	33.2	46.9
		Output Torque Nm, Mechanical	850	1500	2625	4480	8115	11290
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	31.3	Actual Output Speed, rpm	31.6	31.6	32.0	30.0	31.6	32.1
		Input kW, Mechanical	2.90	5.12	9.06	14.5	27.7	39.5
		Output Torque Nm, Mechanical	850	1500	2625	4485	8115	11405
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	23.4	Actual Output Speed, rpm	23.7	23.7	24.0	22.5	23.7	24.1
		Input kW, Mechanical	2.18	3.84	6.80	10.9	20.5	30.0
		Output Torque Nm, Mechanical	850	1500	2625	4485	8020	11570
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	15.6	Actual Output Speed, rpm	15.8	15.8	16.0	15.0	15.8	16.0
		Input kW, Mechanical	1.45	2.56	4.53	7.26	13.5	20.4
		Output Torque Nm, Mechanical	850	1500	2625	4485	7940	11775
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	7.8	Actual Output Speed, rpm	7.9	7.9	8.0	7.5	7.9	8.0
		Input kW, Mechanical	0.73	1.28	2.27	3.63	7.35	10.4
		Output Torque Nm, Mechanical	850	1500	2625	4485	8625	12060
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 40/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXXSE***	PB4REDXXXSE***	PB5REDXXXSE***	PB6REDXXXSE***	PB7REDXXXSE***	PB8REDXXXSE***
			Helical 32/70 Bevel 11/38 Helical 16/87 41.09	Helical 32/70 Bevel 11/38 Helical 16/87 41.09	Helical 32/70 Bevel 11/38 Helical 16/86 40.62	Helical 25/56 Bevel 11/37 Helical 17/94 41.66	Helical 25/56 Bevel 11/37 Helical 16/84 39.56	Helical 25/56 Bevel 11/36 Helical 16/85 38.95
1800	45.0	Actual Output Speed, rpm	43.8	43.8	44.3	43.2	45.5	46.2
		Input kW, Mechanical	4.02	7.09	12.6	20.7	39.5	55.8
		Output Torque Nm, Mechanical	850	1500	2625	4435	8035	11175
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	37.5	Actual Output Speed, rpm	36.5	36.5	36.9	36.0	37.9	38.5
		Input kW, Mechanical	3.35	5.91	10.5	17.4	33.2	47
		Output Torque Nm, Mechanical	850	1500	2625	4480	8115	11295
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	30.0	Actual Output Speed, rpm	29.2	29.2	29.5	28.8	30.3	30.8
		Input kW, Mechanical	2.68	4.73	8.37	13.9	26.5	38.0
		Output Torque Nm, Mechanical	850	1500	2625	4485	8100	11430
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	25.0	Actual Output Speed, rpm	24.3	24.3	24.6	24.0	25.3	25.7
		Input kW, Mechanical	2.23	3.94	6.98	11.6	22.0	32.0
		Output Torque Nm, Mechanical	850	1500	2625	4485	8060	11535
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	18.8	Actual Output Speed, rpm	18.3	18.3	18.5	18.0	19.0	19.3
		Input kW, Mechanical	1.67	2.96	5.23	8.72	16.3	24.3
		Output Torque Nm, Mechanical	850	1500	2625	4485	7975	11690
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	12.5	Actual Output Speed, rpm	12.2	12.2	12.3	12.0	12.6	12.8
		Input kW, Mechanical	1.12	1.97	3.49	5.81	10.8	16.5
		Output Torque Nm, Mechanical	850	1500	2625	4485	7905	11880
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	6.3	Actual Output Speed, rpm	6.1	6.1	6.2	6.0	6.3	6.4
		Input kW, Mechanical	0.56	0.99	1.74	2.91	5.84	8.41
		Output Torque Nm, Mechanical	850	1500	2625	4485	8555	12135
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 50/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXSF***	PB4REDXXSF***	PB5REDXXSF***	PB6REDXXTF***	PB7REDXXTF***	PB8REDXXTF***
			Helical 29/73 Bevel 11/38 Helical 16/87 47.28	Helical 29/73 Bevel 11/38 Helical 16/87 47.28	Helical 29/73 Bevel 11/38 Helical 16/86 46.74	Helical 27/76 Bevel 11/37 Helical 17/94 52.35	Helical 27/76 Bevel 11/37 Helical 16/84 49.71	Helical 27/76 Bevel 11/36 Helical 16/85 48.94
1800	36.0	Actual Output Speed, rpm	38.1	38.1	38.5	34.4	36.2	36.8
		Input kW, Mechanical	3.49	6.17	10.9	16.6	31.7	44.8
		Output Torque Nm, Mechanical	850	1500	2625	4480	8115	11290
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	30.0	Actual Output Speed, rpm	31.7	31.7	32.1	28.7	30.2	30.6
		Input kW, Mechanical	2.91	5.14	9.09	13.9	26.4	37.7
		Output Torque Nm, Mechanical	850	1500	2625	4485	8115	11405
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	24.0	Actual Output Speed, rpm	25.4	25.4	25.7	22.9	24.1	24.5
		Input kW, Mechanical	2.33	4.11	7.28	11.1	21.0	30.5
		Output Torque Nm, Mechanical	850	1500	2625	4485	8060	11535
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	20.0	Actual Output Speed, rpm	21.2	21.2	21.4	19.1	20.1	20.4
		Input kW, Mechanical	1.94	3.43	6.06	9.25	17.4	25.7
		Output Torque Nm, Mechanical	850	1500	2625	4485	7995	11630
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	15.0	Actual Output Speed, rpm	15.9	15.9	16.0	14.3	15.1	15.3
		Input kW, Mechanical	1.46	2.57	4.55	6.94	12.9	19.5
		Output Torque Nm, Mechanical	850	1500	2625	4485	7940	11775
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	10.0	Actual Output Speed, rpm	10.6	10.6	10.7	9.6	10.1	10.2
		Input kW, Mechanical	0.97	1.71	3.03	4.62	8.61	13.2
		Output Torque Nm, Mechanical	850	1500	2625	4485	7925	11950
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	5.0	Actual Output Speed, rpm	5.3	5.3	5.3	4.8	5.0	5.1
		Input kW, Mechanical	0.49	0.86	1.52	2.31	4.74	6.73
		Output Torque Nm, Mechanical	850	1500	2625	4485	8725	12195
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 63/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXSG***	PB4REDXXSG***	PB5REDXXSG***	PB6REDXXTG***	PB7REDXXTG***	PB8REDXXTG***
			Helical 24/78 Bevel 11/38 Helical 16/87 61.05	Helical 24/78 Bevel 11/38 Helical 16/87 61.05	Helical 24/78 Bevel 11/38 Helical 16/86 60.35	Helical 23/80 Bevel 11/37 Helical 17/94 64.69	Helical 23/80 Bevel 11/37 Helical 16/84 61.42	Helical 23/80 Bevel 11/36 Helical 16/85 60.47
1800	28.6	Actual Output Speed, rpm	29.5	29.5	29.8	27.8	29.3	29.8
		Input kW, Mechanical	2.71	4.77	8.45	13.5	25.7	36.7
		Output Torque Nm, Mechanical	850	1500	2625	4485	8110	11410
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	23.8	Actual Output Speed, rpm	24.6	24.6	24.9	23.2	24.4	24.8
		Input kW, Mechanical	2.25	3.98	7.04	11.2	21.3	30.8
		Output Torque Nm, Mechanical	850	1500	2625	4485	8070	11515
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	19.0	Actual Output Speed, rpm	19.7	19.7	19.9	18.6	19.5	19.8
		Input kW, Mechanical	1.80	3.18	5.63	8.98	16.9	24.9
		Output Torque Nm, Mechanical	850	1500	2625	4485	7995	11640
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	15.9	Actual Output Speed, rpm	16.4	16.4	16.6	15.5	16.3	16.5
		Input kW, Mechanical	1.50	2.65	4.70	7.48	14.0	20.9
		Output Torque Nm, Mechanical	850	1500	2625	4485	7960	11730
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	11.9	Actual Output Speed, rpm	12.3	12.3	12.4	11.6	12.2	12.4
		Input kW, Mechanical	1.13	1.99	3.52	5.61	10.4	15.9
		Output Torque Nm, Mechanical	850	1500	2625	4485	7910	11860
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	7.9	Actual Output Speed, rpm	8.2	8.2	8.3	7.7	8.1	8.3
		Input kW, Mechanical	0.75	1.33	2.35	3.74	7.17	10.7
		Output Torque Nm, Mechanical	850	1500	2625	4485	8160	12025
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	4.0	Actual Output Speed, rpm	4.1	4.1	4.1	3.9	4.1	4.1
		Input kW, Mechanical	0.38	0.66	1.17	1.87	3.85	5.47
		Output Torque Nm, Mechanical	850	1500	2625	4485	8765	12250
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 80/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXSH***	PB4REDXXSH***	PB5REDXXSH***	PB6REDXXTH***	PB7REDXXTH***	PB8REDXXTH***
			Helical 20/82 Bevel 11/38 Helical 16/87	Helical 20/82 Bevel 11/38 Helical 16/87	Helical 20/82 Bevel 11/38 Helical 16/86	Helical 19/84 Bevel 11/37 Helical 17/94	Helical 19/84 Bevel 11/37 Helical 16/84	Helical 19/84 Bevel 11/36 Helical 16/85
			77.01	77.01	76.13	82.23	78.07	76.87
1800	22.5	Actual Output Speed, rpm	23.4	23.4	23.6	21.9	23.1	23.4
		Input kW, Mechanical	2.14	3.79	6.70	10.6	20.0	29.2
		Output Torque Nm, Mechanical	850	1500	2625	4485	8025	11560
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	18.8	Actual Output Speed, rpm	19.5	19.5	19.7	18.2	19.2	19.5
		Input kW, Mechanical	1.79	3.15	5.58	8.83	16.6	24.6
		Output Torque Nm, Mechanical	850	1500	2625	4485	7985	11660
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	15.0	Actual Output Speed, rpm	15.6	15.6	15.8	14.6	15.4	15.6
		Input kW, Mechanical	1.43	2.52	4.47	7.07	13.2	19.8
		Output Torque Nm, Mechanical	850	1500	2625	4485	7945	11765
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	12.5	Actual Output Speed, rpm	13.0	13.0	13.1	12.2	12.8	13.0
		Input kW, Mechanical	1.19	2.10	3.72	5.89	10.9	16.6
		Output Torque Nm, Mechanical	850	1500	2625	4485	7915	11850
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	9.4	Actual Output Speed, rpm	9.7	9.7	9.9	9.1	9.6	9.8
		Input kW, Mechanical	0.89	1.58	2.79	4.42	8.27	12.6
		Output Torque Nm, Mechanical	850	1500	2625	4485	7975	11970
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	6.3	Actual Output Speed, rpm	6.5	6.5	6.6	6.1	6.4	6.5
		Input kW, Mechanical	0.60	1.05	1.86	2.94	5.87	8.51
		Output Torque Nm, Mechanical	850	1500	2625	4485	8485	12115
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	3.1	Actual Output Speed, rpm	3.2	3.2	3.3	3.0	3.2	3.3
		Input kW, Mechanical	0.30	0.53	0.93	1.47	3.05	4.32
		Output Torque Nm, Mechanical	850	1500	2625	4485	8810	12310
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.



## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 100/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXSJ***	PB4REDXXSJ***	PB5REDXXSJ***	PB6REDXXXTJ***	PB7REDXXXTJ***	PB8REDXXXTJ***
			Helical 16/86 Bevel 11/38 Helical 16/87 100.96	Helical 16/86 Bevel 11/38 Helical 16/87 100.96	Helical 16/86 Bevel 11/38 Helical 16/86 99.80	Helical 15/88 Bevel 11/37 Helical 17/94 109.11	Helical 15/88 Bevel 11/37 Helical 16/84 103.60	Helical 15/88 Bevel 11/36 Helical 16/85 102.00
1800	18.0	Actual Output Speed, rpm	17.8	17.8	18.0	16.5	17.4	17.6
		Input kW, Mechanical	1.64	2.89	5.11	7.99	14.9	22.3
		Output Torque Nm, Mechanical	850	1500	2625	4485	7970	11695
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	15.0	Actual Output Speed, rpm	14.9	14.9	15.0	13.7	14.5	14.7
		Input kW, Mechanical	1.36	2.41	4.26	6.66	12.4	18.7
		Output Torque Nm, Mechanical	850	1500	2625	4485	7940	11785
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	12.0	Actual Output Speed, rpm	11.9	11.9	12.0	11.0	11.6	11.8
		Input kW, Mechanical	1.09	1.92	3.41	5.33	9.9	15.1
		Output Torque Nm, Mechanical	850	1500	2625	4485	7905	11885
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	10.0	Actual Output Speed, rpm	9.9	9.9	10.0	9.2	9.7	9.8
		Input kW, Mechanical	0.91	1.60	2.84	4.44	8.28	12.7
		Output Torque Nm, Mechanical	850	1500	2625	4485	7945	11960
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	7.5	Actual Output Speed, rpm	7.4	7.4	7.5	6.9	7.2	7.4
		Input kW, Mechanical	0.68	1.20	2.13	3.33	6.48	9.58
		Output Torque Nm, Mechanical	850	1500	2625	4485	8285	12065
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	5.0	Actual Output Speed, rpm	5.0	5.0	5.0	4.6	4.8	4.9
		Input kW, Mechanical	0.45	0.80	1.42	2.22	4.55	6.46
		Output Torque Nm, Mechanical	850	1500	2625	4485	8730	12200
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	2.5	Actual Output Speed, rpm	2.5	2.5	2.5	2.3	2.4	2.5
		Input kW, Mechanical	0.23	0.40	0.71	1.11	2.31	3.26
		Output Torque Nm, Mechanical	850	1500	2625	4485	8850	12310
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 125/1

Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXXSK***	PB4REDXXXSK***	PB5REDXXXSK***	PB6REDXXXTK***	PB7REDXXXTK***	PB8REDXXXTK***
			Helical 13/89 Bevel 11/38 Helical 16/87 128.60	Helical 13/89 Bevel 11/38 Helical 16/87 128.60	Helical 13/89 Bevel 11/38 Helical 16/86 127.12	Helical 13/90 Bevel 11/37 Helical 17/94 128.76	Helical 13/90 Bevel 11/37 Helical 16/84 122.26	Helical 13/90 Bevel 11/36 Helical 16/85 120.37
1800	14.4	Actual Output Speed, rpm	14.0	14.0	14.2	14.0	14.7	15.0
		Input kW, Mechanical	1.28	2.27	4.01	6.77	12.6	19.0
		Output Torque Nm, Mechanical	850	1500	2625	4485	7940	11780
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	12.0	Actual Output Speed, rpm	11.7	11.7	11.8	11.6	12.3	12.5
		Input kW, Mechanical	1.07	1.89	3.34	5.64	10.5	16.0
		Output Torque Nm, Mechanical	850	1500	2625	4485	7910	11865
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	9.6	Actual Output Speed, rpm	9.3	9.3	9.4	9.3	9.8	10.0
		Input kW, Mechanical	0.86	1.51	2.68	4.51	8.41	12.9
		Output Torque Nm, Mechanical	850	1500	2625	4485	7940	11955
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	8.0	Actual Output Speed, rpm	7.8	7.8	7.9	7.8	8.2	8.3
		Input kW, Mechanical	0.71	1.26	2.23	3.76	7.21	10.8
		Output Torque Nm, Mechanical	850	1500	2625	4485	8165	12025
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	6.0	Actual Output Speed, rpm	5.8	5.8	5.9	5.8	6.1	6.2
		Input kW, Mechanical	0.54	0.94	1.67	2.82	5.64	8.16
		Output Torque Nm, Mechanical	850	1500	2625	4485	8520	12125
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	4.0	Actual Output Speed, rpm	3.9	3.9	3.9	3.9	4.1	4.2
		Input kW, Mechanical	0.36	0.63	1.11	1.88	3.87	5.49
		Output Torque Nm, Mechanical	850	1500	2625	4485	8765	12250
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	2.0	Actual Output Speed, rpm	1.9	1.9	2.0	1.9	2.0	2.1
		Input kW, Mechanical	0.18	0.31	0.56	0.94	1.96	2.76
		Output Torque Nm, Mechanical	850	1500	2625	4485	8875	12310
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Selection Data

### Mineral and Synthetic Oils

Nominal ratio: 160/1

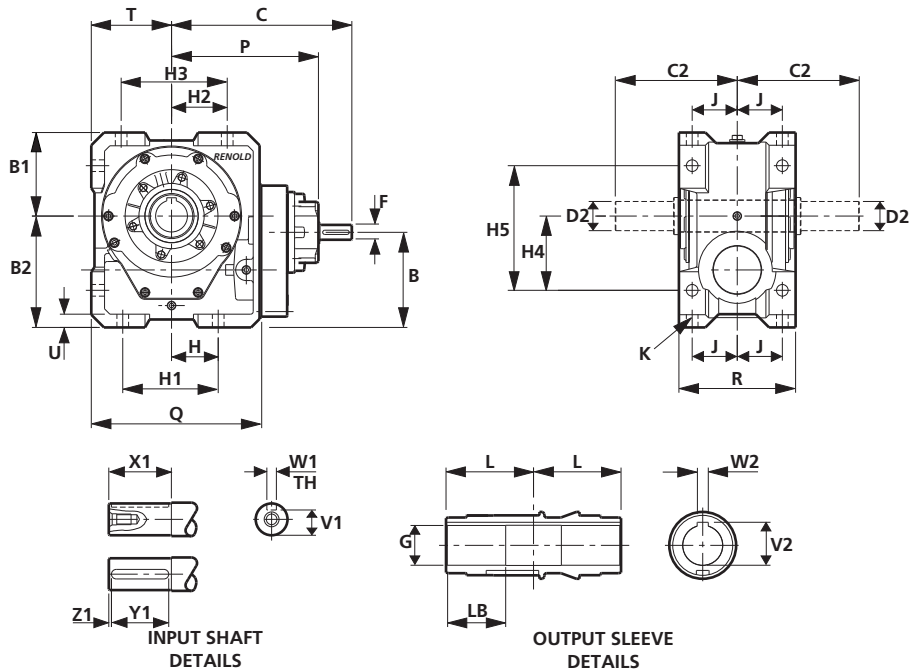
Input rpm	Nominal Output rpm	Product Code Actual Ratio  Overall Ratio	PB3REDXXXSL***	PB4REDXXXSL***	PB5REDXXXSL***	PB6REDXXXTL***	PB7REDXXXTL***	PB8REDXXXTL***
			Helical 11/91 Bevel 11/38 Helical 16/87 155.40	Helical 11/91 Bevel 11/38 Helical 16/87 155.40	Helical 11/91 Bevel 11/38 Helical 16/86 153.61	Helical 13/107 Bevel 11/37 Helical 17/94 153.08	Helical 13/107 Bevel 11/37 Helical 16/84 145.35	Helical 13/107 Bevel 11/36 Helical 16/85 143.10
1800	11.3	Actual Output Speed, rpm	11.6	11.6	11.7	11.8	12.4	12.6
		Input kW, Mechanical	1.06	1.88	3.32	5.69	10.6	16.1
		Output Torque Nm, Mechanical	850	1500	2625	4485	7905	11875
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1500	9.4	Actual Output Speed, rpm	9.7	9.7	9.8	9.8	10.3	10.5
		Input kW, Mechanical	0.89	1.56	2.77	4.74	8.83	13.5
		Output Torque Nm, Mechanical	850	1500	2625	4485	7925	11950
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1200	7.5	Actual Output Speed, rpm	7.7	7.7	7.8	7.8	8.3	8.4
		Input kW, Mechanical	0.71	1.25	2.21	3.80	7.30	10.9
		Output Torque Nm, Mechanical	850	1500	2625	4485	8190	12035
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
1000	6.3	Actual Output Speed, rpm	6.4	6.4	6.5	6.5	6.9	7.0
		Input kW, Mechanical	0.59	1.04	1.84	3.16	6.26	9.13
		Output Torque Nm, Mechanical	850	1500	2625	4485	8425	12100
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
750	4.7	Actual Output Speed, rpm	4.8	4.8	4.9	4.9	5.2	5.2
		Input kW, Mechanical	0.44	0.78	1.38	2.37	4.86	6.90
		Output Torque Nm, Mechanical	850	1500	2625	4485	8725	12190
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
500	3.1	Actual Output Speed, rpm	3.2	3.2	3.3	3.3	3.4	3.5
		Input kW, Mechanical	0.30	0.52	0.92	1.58	3.27	4.64
		Output Torque Nm, Mechanical	850	1500	2625	4485	8800	12305
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0
250	1.6	Actual Output Speed, rpm	1.6	1.6	1.6	1.6	1.7	1.7
		Input kW, Mechanical	0.15	0.26	0.46	0.79	1.65	2.32
		Output Torque Nm, Mechanical	850	1500	2625	4485	8905	12310
		Efficiency %	97.0	97.0	97.0	97.0	97.0	97.0

For details of unit designation code see page 13.



**IMPORTANT** Units to ATEX approval must be selected with a minimum service factor of 1.25.

## RENOLD PM Series - PB Type - Speed Reducer Dimensions



### PM Series - PB Reduction Gear

UNIT REF	B	B1	B2	C	H	H1	H2	H3	H4	H5
PB35	162.0	140.0	180	314	60	135	85	160	120	205
PB40	179.3	157.5	210	340	88	180	105	200	140	235
PB50	183.9	195.0	240	360	88	180	125	230	160	280
PB60	239.6	225.0	280	469	120	235	145	270	190	340
PB70	269.2	255.5	335	484	140	290	160	310	240	412
PB80	278.8	280.0	370	508	140	310	170	340	256	460

UNIT REF	J	K	P	Q	R	T	U
PB35	75	17.0	251	274	186	130	25
PB40	85	21.5	277	321	220	151	25
PB50	100	21.5	297	365	250	175	30
PB60	125	25.5	356	418	305	200	35
PB70	150	25.5	371	458	360	225	35
PB80	150	25.5	395	503	360	246	35

### Input Shaft

UNIT REF	F	V1	W1	X1	Y1	Z1	TH
PB35	28j6	24.0	8P9	60	50	5	M10x22
PB40							
PB50							
PB60	42k6	37.0	12P9	110	100	5	M16x36
PB70							
PB80							

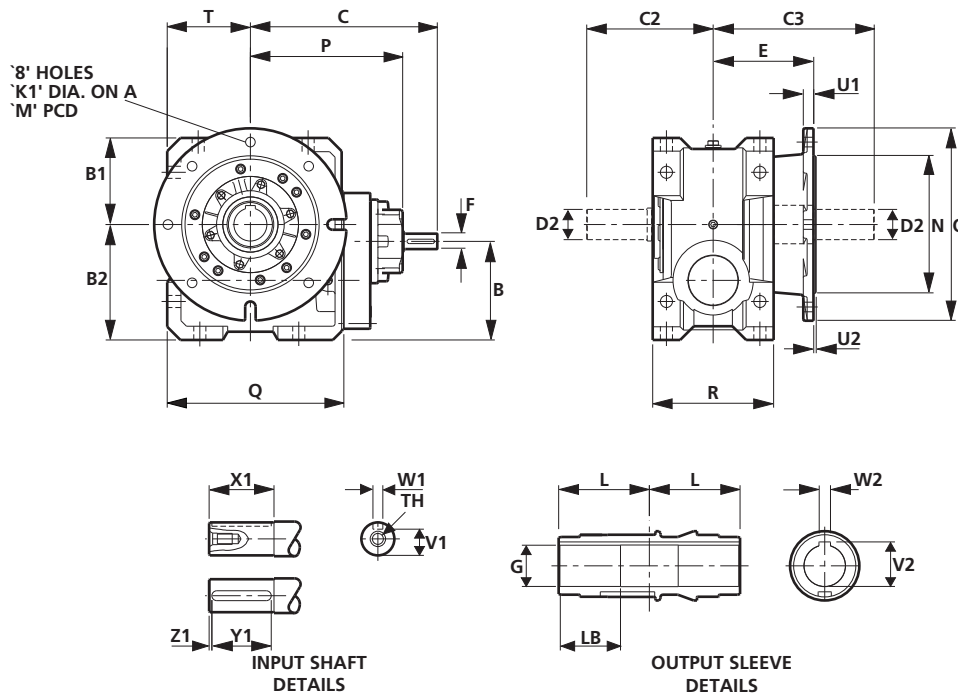
### Output Sleeve

UNIT REF	G	L	LB	V2	W2
PB35	40F7	103	65	43.3	12Js9
PB40	50F7	110	75	53.8	14Js9
PB50	60F7	130	95	64.4	18Js9
PB60	70F7	155	130	74.9	20Js9
PB70	90F7	174	125	95.4	25Js9
PB80	100F7	174	115	106.4	28Js9

### Plug-in Output Shaft

UNIT REF	C2	D2-SE	D2-DE
PB35	190	40k6	39k6
PB40	220	50k6	49k6
PB50	260	60m6	59m6
PB60	305	70m6	69m6
PB70	355	85m6	85m6
PB80	355	95m6	95m6

## RENOLD PM Series - PB Type - Speed Reducer Dimensions



### PM Series - PB Reduction Gear - (Horizontal Flange Mounted)

UNIT REF	B	B1	B2	C	E	K1	M	N	O
PB35	162.0	140.0	180	314	154	13.5	265	230h8	300
PB40	179.3	157.5	210	340	183	17.5	300	250h8	350
PB50	183.9	195.0	240	360	197	17.5	350	300h8	400
PB60	239.6	225.0	280	469	215	17.5	400	350h8	450
PB70	269.2	255.5	335	484	248	17.5	500	450h8	550
PB80	278.8	280.0	370	508	248	17.5	500	450h8	550

UNIT REF	P	Q	R	T	U1	U2
PB35	251	274	186	130	13	4
PB40	277	321	220	151	19	5
PB50	297	365	250	175	19	5
PB60	356	418	305	200	19	5
PB70	371	458	360	225	24	5
PB80	395	503	360	246	24	5

### Input Housing - Reduction

UNIT REF	F	V1	W1	X1	Y1	Z1	TH
PB35	28j6	24.0	8P9	60	50	5	M10x22
PB40							
PB50							
PB60	42k6	37.0	12P9	110	100	5	M16x30
PB70							
PB80							

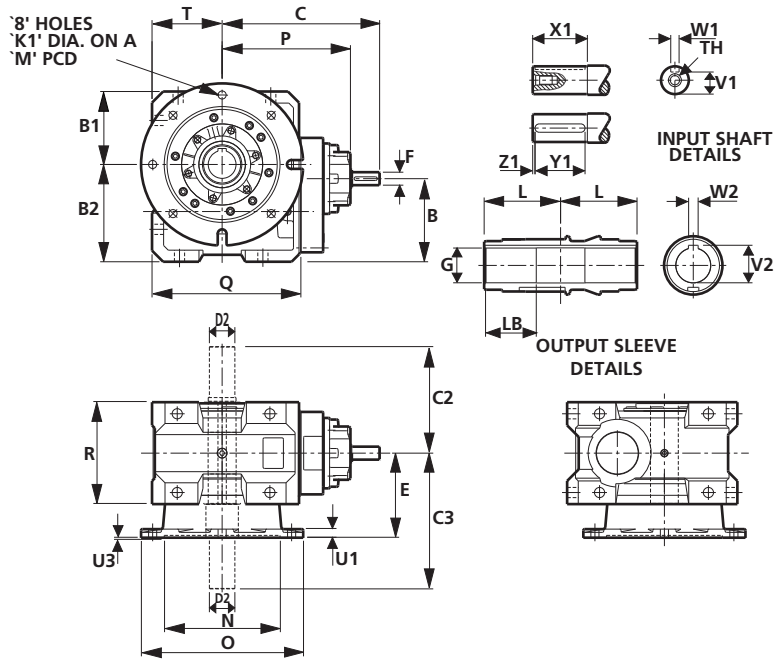
### Output Sleeve

UNIT REF	G	L	LB	V2	W2
PB35	40F7	103	65	43.3	12Js9
PB40	50F7	110	75	53.8	14Js9
PB50	60F7	130	95	64.4	18Js9
PB60	70F7	155	130	74.9	20Js9
PB70	90F7	174	125	95.4	25Js9
PB80	100F7	174	115	106.4	28Js9

### Plug-in Output Shaft

UNIT REF	C2	D2-SE	D2-DE
PB35	190	40k6	39k6
PB40	220	50k6	49k6
PB50	260	60m6	59m6
PB60	305	70m6	69m6
PB70	355	85m6	85m6
PB80	355	95m6	95m6

## RENOLD PM Series - PB Type - Speed Reducer Dimensions



### PM Series - PB Reduction Gear - (Vertical Skirt)

UNIT REF	B	B1	B2	C	E	K1	M	N	O
PB35	162.0	140.0	180	314	154	13.5	265	230H8	300
PB40	179.3	157.5	210	340	183	17.5	300	250H8	350
PB50	183.9	195.0	240	360	197	17.5	350	300H8	400
PB60	239.6	225.0	280	469	215	17.5	400	350H8	450
PB70	269.2	255.5	335	484	248	17.5	500	450H8	550
PB80	278.8	280.0	370	508	248	17.5	500	450H8	550

UNIT REF	P	Q	R	T	U1	U3
PB35	251	274	186	130	13	5
PB40	277	321	220	151	19	6
PB50	297	365	250	175	19	6
PB60	356	418	305	200	19	6
PB70	371	458	360	225	24	6
PB80	395	503	360	246	24	6

### Input Shaft

UNIT REF	F	V1	W1	X1	Y1	Z1	TH
PB35	28j6	24.0	8P9	60	50	5	M10x22
PB40							
PB50							
PB60	42k6	37.0	12P9	110	100	5	M16x30
PB70							
PB80							

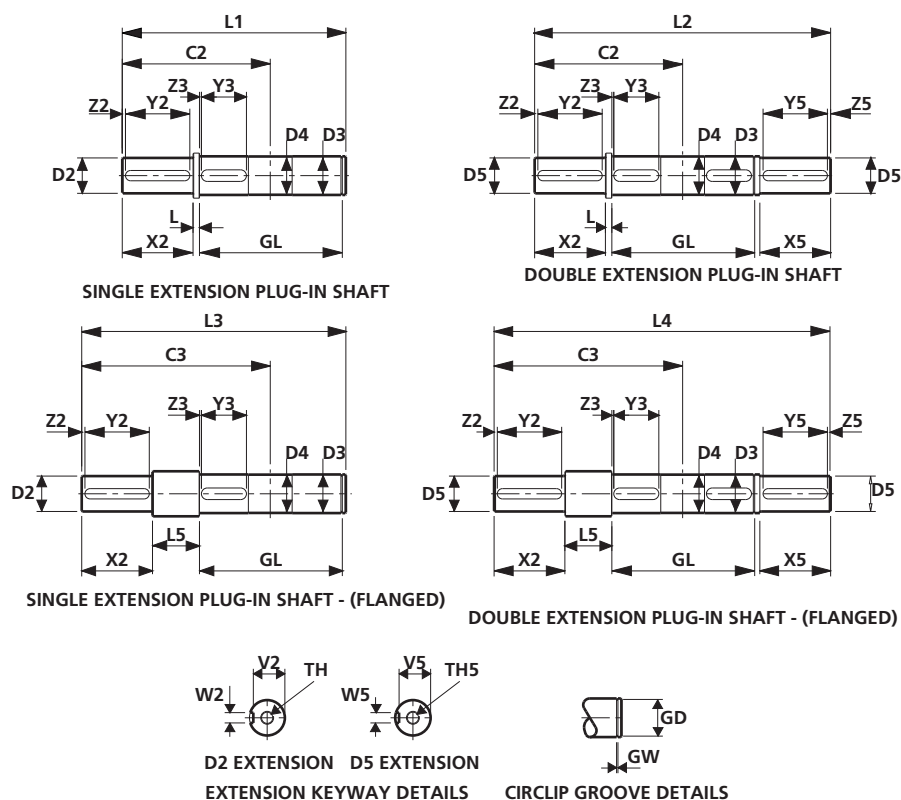
### Output Sleeve

UNIT REF	G	L	LB	V2	W2
PB35	40F7	103	65	43.3	12Js9
PB40	50F7	110	75	53.8	14Js9
PB50	60F7	130	95	64.4	18Js9
PB60	70F7	155	130	74.9	20Js9
PB70	90F7	174	125	95.4	25Js9
PB80	100F7	174	115	106.4	28Js9

### Plug-in Output Shaft

UNIT REF	C2	D2-SE	D2-DE
PB35	190	40k6	39k6
PB40	220	50k6	49k6
PB50	260	60m6	59m6
PB60	305	70m6	69m6
PB70	355	85m6	85m6
PB80	355	95m6	95m6

## RENOLD PM Series - PB Type - Output Shaft Dimensions



### Plug-in Shafts

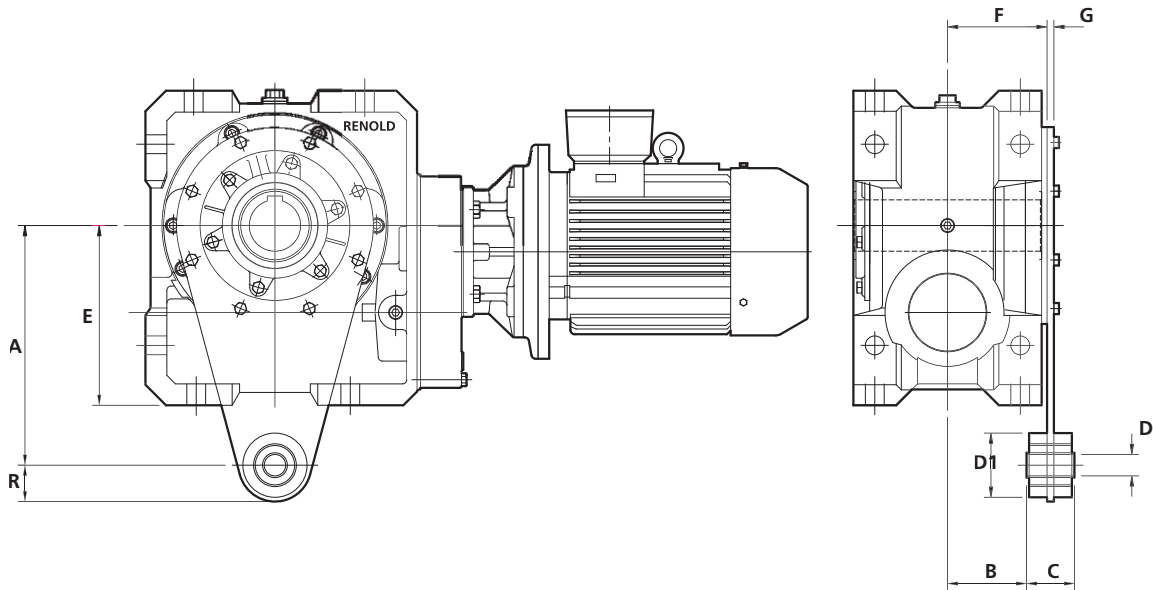
UNIT REF	C2	C3	L	L1	L2	L3	L4	L5	GD	GL	GW
PB35	190	234	7	300.5	380	344.5	424	51	37.50	207.65	1.99
									37.25	207.60	1.85
PB40	220	283	10	337.5	440	400.5	503	73	47.00	222.15	2.29
									46.75	222.10	2.15
PB50	260	317	10	398.5	520	455.5	577	67	57.00	262.15	2.29
									56.7	262.10	2.15
PB60	305	355	10	469.5	610	519.5	660	60	67.00	312.65	2.79
									66.70	312.60	2.65
PB70	355	418	11	538.5	710	601.5	773	74	86.50	351.15	3.33
									86.15	351.10	3.15
PB80	355	418	11	538.5	710	601.5	773	74	96.50	351.15	3.33
									96.15	351.10	3.15

UNIT REF	D2	V2	W2	X2	Y2	Z2	TH	D3	Y3	Z3
PB35	40k6	35.00	12P9	80	70	5	M16x36	40h6	63	3
PB40	50k6	44.50	14P9	100	90	5	M16x36	50h6	80	3
PB50	60m6	53.00	18P9	120	110	5	M20x42	60h6	100	3
PB60	70m6	62.50	20P9	140	125	5	M20x42	70h6	125	3
PB70	85m6	76.00	22P9	170	160	5	M20x42	90h6	140	3
PB80	95m6	86.00	25P9	170	160	5	M24x50	100h6	125 *	3

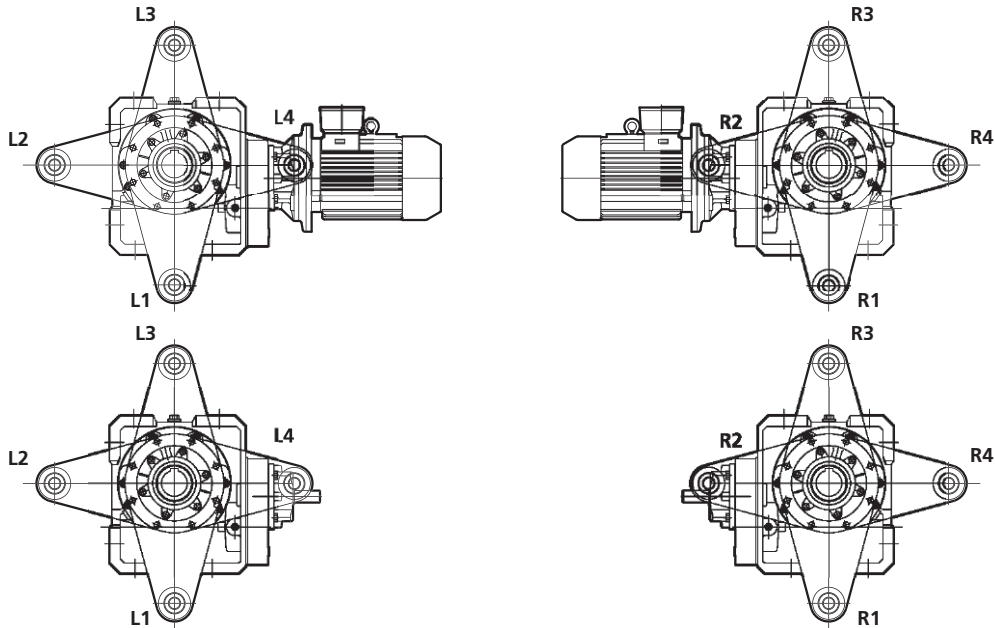
UNIT REF	D4	D5	V5	W5	X5	Y5	Z5	TH5
PB35	38	39k6	34.00	12P9	80	70	5	M16x36
PB40	48	49k6	43.50	14P9	100	90	5	M16x36
PB50	58	59m6	52.00	18P9	120	110	5	M20x42
PB60	68	69m6	61.50	20P9	140	125	5	M20x42
PB70	88	85m6	76.00	22P9	170	160	5	M20x42
PB80	96	95m6	86.00	25P9	170	160	5	M24x50

\*Two Keys

## RENOLD PM Series - PB Type - Torque Restraint Bracket



Note Positions L4 & R2  
Check clearance with motor adaptor  
or input housing/coupling

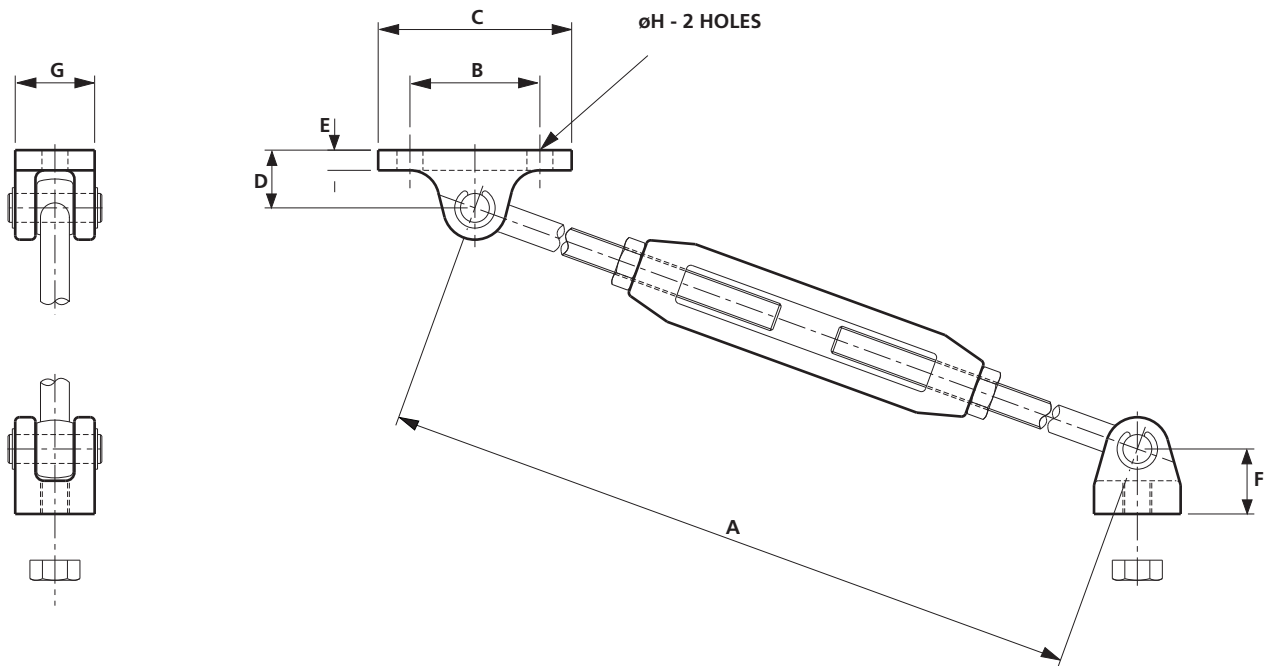


### Torque Restraint Bracket

UNIT SIZE	A	B	C	D	D1	E	F	G	R
PB35	240	68.0	70	20	70	180	97	12	45
PB40	270	102.0	70	20	70	210	131	12	45
PB50	300	116.0	70	20	70	240	145	12	45
PB60	360	134.5	66	30	80	280	160	15	52
PB70	415	159.5	66	30	80	335	185	15	52
PB80	450	159.5	66	30	80	370	185	15	52







### Torque Arm Assembly

UNIT SIZE	A	B	C	D	E	F	G	H
PB35	600 750	75	108	35	13	40	41	M12
PB40	600 750	90	133	40	14	45	52	M16
PB50	600 750	90	133	40	14	45	52	M16
PB60	910 760	115	178	57	21	55	76	M20
PB70	910 760	115	178	57	21	55	76	M20
PB80	910 760	115	178	57	21	55	76	M20

**RENOLD PM Series - Installation, Maintenance & Storage****Initial Running**

All units are supplied without oil.

**First Filling**

When installed and before running, the unit should be filled with new lubricant to the correct level as follows.

With the gear stationary, remove the filler and breather plug and oil level plug. Fill until the lubricant level is visible at the indicator (if fitted) or until lubricant overflows from oil level aperture.

Replace and secure both plugs. Care should be taken to avoid overfilling, as this may cause subsequent leakage.

**Starting Up**

All units have been subjected to a short test before despatch to the customer but it takes many hours running under full load for the gear to attain its highest efficiency. The gear may if necessary be put to work immediately on full load, but if circumstances permit it is better for the ultimate life of the gear to run it in under gradually increasing load. Attaining the full load after about 20 to 40 hours. Reasonable precautions should however, be taken to avoid overloads in the early stage of running. Temperature rise on the initial run will be higher than that eventually attained after the gear is fully run in.

**Routine Maintenance**

The oil level in the unit should be regularly maintained, and should be checked at least once a month. To avoid false readings, examination of the oil level should be made with the gear stationary, and to maintain free ventilation of the unit under all conditions, the breather hole in the filler plug should be kept clear at all times.

**Changing Oil**

The oil should be changed completely at intervals depending upon the working conditions.

**Grease Lubrication of Bearings**

Where this feature is included, the bearing caps are fitted with a grease nipple or stauffer lubricator, which should be used to lubricate the bearings.

**Couplings and Bedplates**

All couplings should be carefully fitted and shafts accurately aligned. To prevent damage to the bearings, coupling half-bodies should not be hammered onto shafts.

Gear units and other drive components should be rigidly mounted on firm foundations to prevent movement and vibration which may affect the alignment of the shafts. Suitable bedplates can be supplied if required.

**Abnormal Ambient Temperatures**

If the gear unit is to be operated under extremes of temperature or humidity, special oils may be required and recommendations will be made on request.

**Storage**

All gear units stored or left inactive for long periods should be adequately protected, particularly those on exposed sites and those operating in corrosive atmospheres.

The following precautions will generally be adequate, but advice on the protection of particular units will be given, if required.

If empty of oil: spray the gear case interior with rust preventative oil; compatible with lubricant recommended for service conditions. If filled with oil: operate at full speed once per month for not less than 10 minutes to ensure liberal coating of all internal parts with oil.

For indefinite storage: completely fill unit with oil ensuring complete submersion of all internal components and shafts should be occasionally turned by hand. When unit is returned to service, drain and refill with new oil to correct level.

External shaft extensions and oil seals can be protected by the use of grease impregnated tape. Full long term storage specification details can be obtained from Renold on request.

**Spare Parts**

Information relating to spare parts is available on request.

## RENOLD PM Series - PB Type - Lubrication Information

The correct fill of oil for the unit size and mounting position can be found in either the appropriate catalogue or the Installation and Maintenance Guide. Only good quality oils should be used, such as those listed below, as the use of inferior or unsuitable products may cause rapid wear and possible damage to the gearbox.

Oils with three viscosity ranges (Light, medium and heavy) are listed below, the correct choice depends on the application operating speed, load and temperature. Temperature and speed can often be the main factor as it effects the operating viscosity.

If the unit runs below the catalogue rating and operates at a temperature below 60°C then a light grade oil should be used. Operating at catalogue rating with temperatures up to 100°C require medium grade.

Using too a heavy a grade than required will result in reduced efficiency, too light a grade will result in premature wear, if in doubt ask Renold Gears Technical Department. Heavy grade oils are shown for reference only.

### Which Oil to Select

There are three main oils Mineral, Synthetic (Polyalphaolefin) and Synthetic (Polyglycol). Mineral oils tend to be cheaper, have a lower life and are less efficient. Synthetic (Polyalphaolefin) can operate over a higher temperature range, are more efficient and have a longer life.

The use of Synthetic (Polyglycol) are not recommended without prior discussion with Renold as special paints and seals are required.

If necessary a list of recommended food grade oils is available on request.

Mineral Oil	Light		Medium		Heavy	
		Temp °C		Temp °C		Temp °C
Mobil Gear *	630	-13 to 90	632	-13 to 90	634	-1 to 90
Mobil Gear XMP	220	-13 to 100	320	-13 to 100	460	-1 to 100
Castrol Alpha SP *	220	-21 to 120	320	-21 to 120	460	-6 to 120
Castrol AlphaMax	220	-24 to 120	320	-18 to 120	460	-15 to 120
Shell Omala F	220	-9 to 120	320	-9 to 120	460	-9 to 120
Shell Omala	220	-9 to 120	320	-9 to 120	460	-9 to 120
Esso Spartan EP	220	-30 to 120	320	-27 to 120	460	-18 to 120
Kluberoil GEM 1	220	-18 to 100	320	0 to 100	460	0 to 100

Synthetic (Polyalphaolefin)	Light		Medium		Heavy	
		Temp °C		Temp °C		Temp °C
Mobil Gear SHC *	630	-42 to 160	632	-42 to 160	634	-39 to 160
Mobil Gear SHC XMP	220	-42 to 160	320	-42 to 160	460	-39 to 160
Castrol Alpha EP	220	-42 to 150	320	-36 to 150	460	-20 to 150
Castrol Alpha T	220	-36 to 150	320	-33 to 150	460	-33 to 150
Shell Omala HD	220	-40 to 150	320	-40 to 150	460	-40 to 150
Esso Spartan Synthetic EP	220	-27 to 120	320	-27 to 120	460	-18 to 120
Klubersynth EG 4	220	-30 to 160	320	-30 to 160	460	-25 to 160

If a Sprag Clutch backstop is fitted internally to the gear unit, oils with EP type additives must not be used.

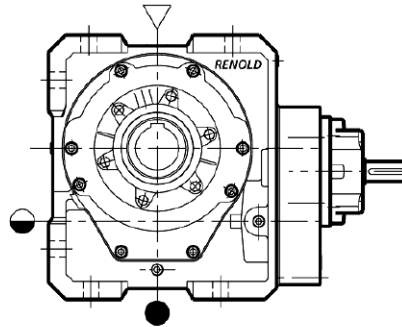
The oils shown below are all suitable for use with Sprag Clutch backstops

Mineral Oil	Light		Medium		Heavy	
		Temp °C		Temp °C		Temp °C
Mobil DTE	BB	-7 to 90	AA	2 to 90	HH	2 to 90
Castrol Alpha ZN	220	-9 to 120	320	-9 to 120	460	-9 to 120
Shell Vitrea	220	-24 to 120	320	-18 to 120	460	-15 to 120
Esso Teresso	220	-18 to 120	320	-12 to 120	460	-9 to 120
Kluberoil GEM 1	220	-18 to 100	320	0 to 100	460	0 to 100

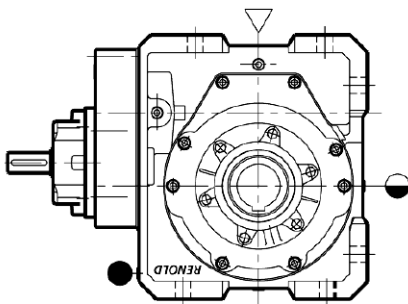
Synthetic (Polyalphaolefin)	Light		Medium		Heavy	
		Temp °C		Temp °C		Temp °C
Mobil Gear SHC	630	-42 to 160	632	-42 to 160	634	-39 to 160
Castrol Alpha T	220	-36 to 80	320	-33 to 80	460	-33 to 80
Shell Omala RL	220	-40 to 80	320	-40 to 80	460	-40 to 80
Esso Teresso SHP	220	-42 to 150	320	-36 to 150	460	-30 to 150

Oils specifications can vary world wide therefore it may be necessary to check locally with your oil supplier.

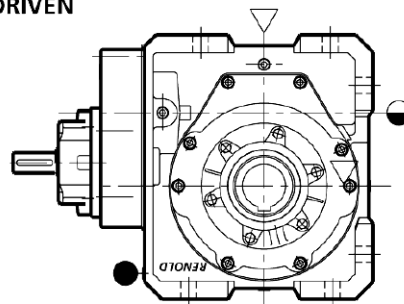
## RENOLD PM Series - PB Type - Oil Capacities



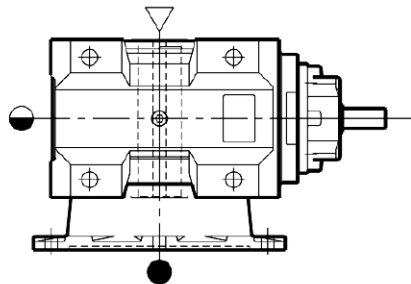
UNDERDRIVEN



OVERDRIVEN



OVERDRIVEN  
(SLOW SPEED)



VERTICAL OUTPUT

▽ FILLER/BREATHER PLUG

◐ OIL LEVEL PLUG

● DRAIN PLUG

### PM Series PB Helical/Bevel/Helical Oil Quantities (Litres)

UNIT REF	Underdriven	Over driven		Vertical Output VA - VQ WA - WG	Mounting pos'n VS - VY & V1 - V7 WJ - WQ
		Normal Speed	Slow Speed		
PB35	1.2	2.6	4.3	1.5	3.0
PB40	1.7	3.6	5.6	2.5	4.2
PB50	2.8	6.6	11.0	5.2	7.7
PB60	5.1	10.2	18.0	6.6	12.8
PB70	7.5	14.9	26.0	12.0	17.7
PB80	9.1	17.6	30.0	14.0	22.5

Nominal oil quantity - May vary with ratio

\* FOR ANY OTHER MOUNTING PLEASE REFER TO RENOLD GEARS

## RENOLD PM Series - PB Type - Unit Weights

### PM Series PB Bevel/Helical Weights (kg)

PB35	Foot Mounting			Flange Mounting			Vertical Output		
	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension
PB35-Red'n gear	65	68	69	70	74	75	70	74	75
PB35 + MD80K	76	79	79	81	85	85	81	84	85
PB35 + MD80G	76	79	80	82	85	86	81	85	86
PB35 + MD90S	79	82	83	85	88	89	84	88	89
PB35 + MD90L	82	85	85	87	91	91	87	90	91
PB35 + MD100L	89	92	92	94	98	98	94	97	98
PB35 + MD100LX	92	95	96	98	101	102	98	101	102
PB35 + MD112M	98	101	102	104	107	108	104	107	108
PB35 + MD132S	115	118	119	121	124	125	120	124	125
PB35 + MD132M	133	136	136	138	142	142	138	141	142

PB40	Foot Mounting			Flange Mounting			Vertical Output		
	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension
PB40-Red'n gear	86	91	93	97	104	105	97	103	105
PB40 + MD80K	97	102	108	108	114	116	107	114	115
PB40 + MD80G	97	103	109	108	115	117	108	115	116
PB40 + MD90S	100	105	112	111	118	119	111	118	119
PB40 + MD90L	103	108	115	114	120	122	113	120	122
PB40 + MD100L	110	115	122	121	127	129	120	127	128
PB40 + MD100LX	114	119	125	125	131	133	124	131	132
PB40 + MD112M	120	125	131	131	137	139	130	137	138
PB40 + MD132S	136	141	148	147	154	155	147	154	155
PB40 + MD132M	154	159	166	165	172	173	165	171	173

PB50	Foot Mounting			Flange Mounting			Vertical Output		
	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension
PB50-Red'n gear	127	135	138	140	151	153	139	150	152
PB50 + MD80K	137	146	148	151	161	163	150	160	163
PB50 + MD80G	138	146	149	151	162	164	151	161	163
PB50 + MD90S	141	149	152	154	165	167	154	164	166
PB50 + MD90L	143	152	154	157	167	169	156	167	169
PB50 + MD100L	150	159	161	164	174	176	163	174	176
PB50 + MD100LX	154	163	165	168	178	180	167	177	180
PB50 + MD112M	160	169	171	174	184	186	173	183	186
PB50 + MD132S	177	185	188	190	201	203	190	200	202
PB50 + MD132M	194	203	205	208	218	221	207	218	220
PB50 + MD160M	255	264	266	269	280	282	268	279	281
PB50 + MD160L	275	284	286	289	300	302	288	299	301

**RENOLD PM Series - PB Type - Unit Weights****PM Series PB Bevel/Helical Weights (kg)**

PB60	Foot Mounting			Flange Mounting			Vertical Output		
	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension
PB60-Red'n gear	211	225	229	228	244	247	227	243	247
PB60 + MD100L	232	246	250	249	265	269	248	264	268
PB60 + MD100LX	236	250	254	253	269	273	252	268	272
PB60 + MD112M	242	256	260	259	275	279	258	274	278
PB60 + MD132S	261	275	279	278	294	298	277	293	297
PB60 + MD132M	279	293	296	295	311	315	295	311	314
PB60 + MD160M	333	347	351	350	366	370	349	365	369
PB60 + MD160L	353	367	371	370	386	390	369	385	389
PB60 + MD180M	387	401	405	404	420	424	403	419	423
PB60 + MD180L	401	415	419	418	434	438	417	433	437
PB60 + MD200L	452	466	470	469	485	489	468	484	488

PB70	Foot Mounting			Flange Mounting			Vertical Output		
	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension
PB70-Red'n gear	297	323	331	323	354	361	322	352	360
PB70 + MD100L	319	345	352	345	375	383	344	374	381
PB70 + MD100LX	323	348	356	349	379	386	347	378	385
PB70 + MD112M	329	354	362	355	385	392	353	384	391
PB70 + MD132S	348	374	381	374	404	411	373	403	410
PB70 + MD132M	365	391	399	391	421	429	390	420	428
PB70 + MD160M	420	445	453	446	476	483	444	475	482
PB70 + MD160L	440	465	473	466	496	503	464	495	502
PB70 + MD180M	474	499	507	500	530	537	498	529	536
PB70 + MD180L	488	513	521	514	544	551	512	543	550
PB70 + MD200L	540	566	573	566	596	604	565	595	602

PB80	Foot Mounting			Flange Mounting			Vertical Output		
	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension	Hollow Shaft	Single Extension	Double Extension
PB80-Red'n gear	365	390	398	395	432	441	394	430	440
PB80 + MD100L	386	412	420	416	453	463	415	452	461
PB80 + MD100LX	390	416	423	420	457	466	419	456	465
PB80 + MD112M	396	422	429	426	463	472	425	462	471
PB80 + MD132S	415	441	448	445	482	491	444	481	490
PB80 + MD132M	432	458	466	463	499	509	461	498	508
PB80 + MD160M	487	513	520	517	554	563	516	553	562
PB80 + MD160L	507	533	540	537	574	583	536	573	582
PB80 + MD180M	541	567	574	571	608	617	570	607	616
PB80 + MD180L	555	581	588	585	622	631	584	621	630
PB80 + MD200L	607	633	640	637	674	683	636	673	682





Notes

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