

Worm and wheel gearbox



P15

Torque up to 3,75Nm

- Ratios from 5:1 to 120:1
- Output backlash $\leq 0^{\circ}30'$
- Max. input speed: 3000 rpm
- Materials:
 - Casing: anodised aluminium
 - Input: non-hardened steel
 - Output: Bronze
 - Cap: stainless steel
- Weight: 0,15 kg

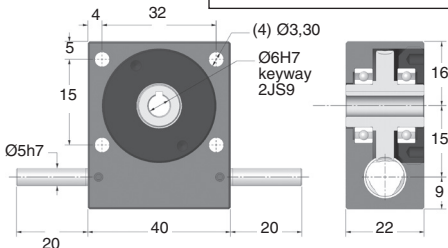
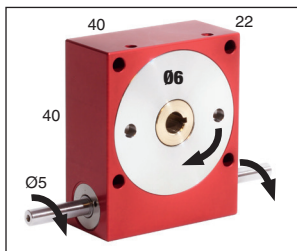
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P20-X and P20-DX



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	6,66:1	8:1	10:1	13,33:1	20:1	40:1	80:1
3000	1,05	1,13	1,20	1,28	1,43	1,58	0,94
2000	1,28	1,28	1,35	1,35	1,58	1,80	1,07
1000	1,58	1,73	1,73	1,88	2,03	2,18	1,28
500	2,03	2,03	2,10	2,18	2,40	2,63	1,46
200	2,55	2,63	2,63	2,78	2,93	3,08	1,70
100	2,93	2,93	3,08	3,15	3,23	3,38	1,91
50	3,30	3,38	3,38	3,45	3,53	3,60	2,04
10	3,60	3,60	3,68	3,68	3,75	3,75	2,04

DISCOUNTS

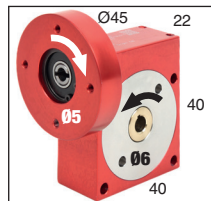
Qty	1+	2+	4+	6+
Disc.	List -10%	-15%	On request	On request

Part number	Ratios	Efficiency at 1000 t/min	Reflected inertia at input (kg.m ²)	Self-locking output	Stock*	Price each
P15-6	6,66:1	86%	1,79x10 ⁻⁷	NO	✓	282,43 €
P15-8	8:1	85%	1,73x10 ⁻⁷	NO	✓	282,43 €
P15-10	10:1	84%	1,68x10 ⁻⁷	NO	✓	282,43 €
P15-13	13,33:1	78%	1,65x10 ⁻⁷	NO	-	282,43 €
P15-20	20:1	71%	1,62x10 ⁻⁷	NO	-	282,43 €
P15-40	40:1	60%	1,61x10 ⁻⁷	NO	✓	282,43 €
P15-80	80:1	32%	1,60x10 ⁻⁷	NO	-	282,43 €
P15-A	Reduced output backlash $\leq 0^{\circ}8'$					On request
P15-AR	Reduced output backlash $\leq 0^{\circ}4'$					On request

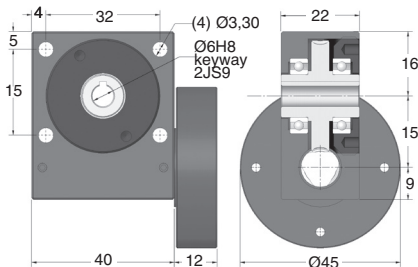
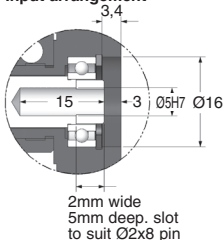
* Depending on availability - Dimensions in mm

- Ratios from 6:1 to 80:1
- Output backlash $\leq 0^{\circ}30'$
- Max input speed: 3000 rpm
- Materials:
 - Casing: Anodised aluminium
 - Input: non-hardened steel
 - Output: Bronze
 - Cap: stainless steel
- The angle of the input flange is not positioned
- Verify it is suitable for use with your motor
- Weight: 0,21 kg

High reduction ratios



Input arrangement



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	6,66:1	8:1	10:1	13,33:1	20:1	40:1	80:1
3000	1,05	1,13	1,20	1,28	1,43	1,58	0,94
2000	1,28	1,28	1,35	1,35	1,58	1,80	1,07
1000	1,58	1,73	1,73	1,88	2,03	2,18	1,28
500	2,03	2,03	2,10	2,18	2,40	2,63	1,46
200	2,55	2,63	2,63	2,78	2,93	3,08	1,70
100	2,93	2,93	3,08	3,15	3,23	3,38	1,91
50	3,30	3,38	3,38	3,45	3,53	3,60	2,04
10	3,60	3,60	3,68	3,68	3,75	3,75	2,04

DISCOUNTS

Qty	1+	2+	4+	6+
Disc.	List -10%	-15%	On request	On request

Part number	Ratios	Efficiency at 1000 t/min	Reflected inertia at input (kg.m ²)	Self-locking output	Price each
PF15-6	6,66:1	86%	1,79x10 ⁻⁷	NO	363,04 €
PF15-8	8:1	85%	1,73x10 ⁻⁷	NO	363,04 €
PF15-10	10:1	84%	1,68x10 ⁻⁷	NO	363,04 €
PF15-13	13,33:1	78%	1,65x10 ⁻⁷	NO	363,04 €
PF15-20	20:1	71%	1,62x10 ⁻⁷	NO	363,04 €
PF15-40	40:1	60%	1,61x10 ⁻⁷	NO	363,04 €
PF15-80	80:1	32%	1,60x10 ⁻⁷	NO	363,04 €
PF15-A	Reduced output backlash $\leq 0^{\circ}8'$				On request
PF15-AR	Reduced output backlash $\leq 0^{\circ}4'$				On request

* Depending on availability - Dimensions in mm

Worm and wheel gearbox

Size XS

1 2 3

Stock

P20

Torque up to 5Nm

- Ratios from 5:1 to 120:1
- Output backlash $\leq 0^{\circ}30'$
- Max. input speed: 3000 rpm
- Materials:
Casing: anodised aluminium
Input: non-hardened steel
Output: Bronze
Cap: stainless steel
- Weight: 0,18 kg

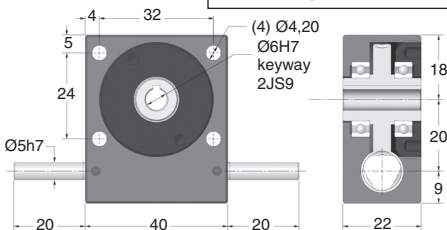
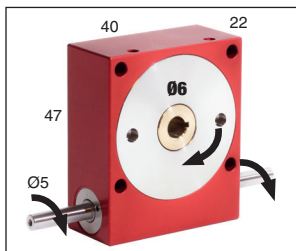
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	10:1	12:1	15:1	20:1	30:1	60:1	120:1
3000	1,40	1,50	1,60	1,70	1,90	2,10	1,25
2000	1,70	1,70	1,80	1,80	2,10	2,40	1,42
1000	2,10	2,30	2,30	2,50	2,70	2,90	1,70
500	2,70	2,70	2,80	2,90	3,20	3,50	1,94
200	3,40	3,50	3,50	3,70	3,90	4,10	2,27
100	3,90	3,90	4,10	4,20	4,30	4,50	2,55
50	4,40	4,50	4,50	4,60	4,70	4,80	2,72
10	4,80	4,80	4,90	4,90	5,00	5,00	2,72

DISCOUNTS

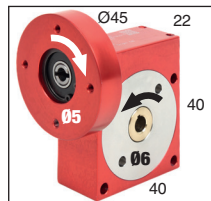
Qty	1+	2+	4+	6+
Disc.	List -10%	-15%	On request	On request

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Stock*	Price each
P20-10	10:1	86%	2,03 x 10 ⁻⁷	NO	✓	315,73 €
P20-12	12:1	85%	1,93 x 10 ⁻⁷	NO	-	315,73 €
P20-15	15:1	84%	1,85 x 10 ⁻⁷	NO	✓	315,73 €
P20-20	20:1	78%	1,78 x 10 ⁻⁷	NO	✓	315,73 €
P20-30	30:1	71%	1,74 x 10 ⁻⁷	NO	✓	315,73 €
P20-60	60:1	60%	1,71 x 10 ⁻⁷	YES	✓	315,73 €
P20-120	120:1	32%	1,50 x 10 ⁻⁷	YES	✓	315,73 €
P20-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			-	On request
P20-A		Reduced output backlash $\leq 0^{\circ}8'$			-	On request
P20-AR		Reduced output backlash $\leq 0^{\circ}4'$			-	On request

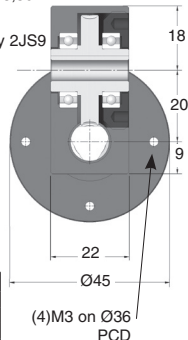
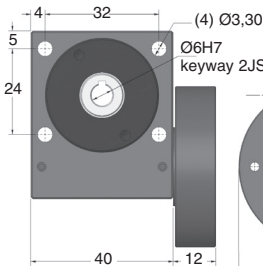
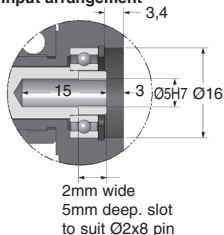
*Depending on availability - Dimensions in mm

- Ratios from 5:1 to 120:1
- Output backlash $\leq 0^{\circ}30'$
- Max input speed: 3000 rpm
- Materials:
 - Casing: Anodised aluminium
 - Input: non-hardened steel
 - Output: Bronze
 - Cap: stainless steel
- The angle of the input flange is not positioned
- Verify it is suitable for use with your motor
- Weight: 0,23 kg

High reduction ratios



Input arrangement



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	10:1	12:1	15:1	20:1	30:1	60:1	120:1
3000	1,40	1,50	1,60	1,70	1,90	2,10	1,25
2000	1,70	1,70	1,80	1,80	2,10	2,40	1,42
1000	2,10	2,30	2,30	2,50	2,70	2,90	1,70
500	2,70	2,70	2,80	2,90	3,20	3,50	1,94
200	3,40	3,50	3,50	3,70	3,90	4,10	2,27
100	3,90	3,90	4,10	4,20	4,30	4,50	2,55
50	4,40	4,50	4,50	4,60	4,70	4,80	2,72
10	4,80	4,80	4,90	4,90	5,00	5,00	2,72

DISCOUNTS

Qty	1+	2+	4+	6+
Disc.	List -10%	List -15%	On request	On request

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Price each
PF20-10	10:1	86%	2,53 x 10 ⁻⁷	NO	402,57 €
PF20-12	12:1	85%	2,43 x 10 ⁻⁷	NO	402,57 €
PF20-15	15:1	84%	2,35 x 10 ⁻⁷	NO	402,57 €
PF20-20	20:1	78%	2,28 x 10 ⁻⁷	NO	402,57 €
PF20-30	30:1	71%	2,24 x 10 ⁻⁷	NO	402,57 €
PF20-60	60:1	60%	2,21 x 10 ⁻⁷	YES	402,57 €
PF20-120	120:1	32%	2,00 x 10 ⁻⁷	YES	402,57 €
PF20-SP	5:1 - 120:1	Ratios from 5:1 to 120:1 or left handed			On request
PF20-A		Reduced output backlash $\leq 0^{\circ}8'$			On request
PF20-AR		Reduced output backlash $\leq 0^{\circ}4'$			On request

Dimensions in mm

Worm and wheel gearbox

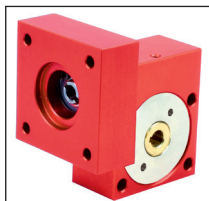


PF20NM

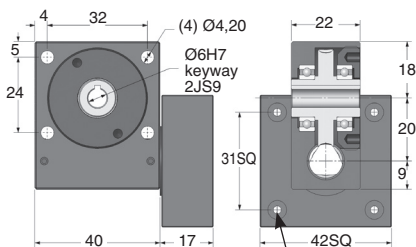
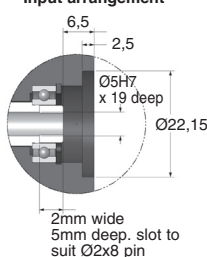
Torque up to 5Nm

NEMA 17 square flange

- Ratios from 5:1 to 120:1
- Output backlash $\leq 0^{\circ}30'$
- Max. input speed: 3000 rpm
- Materials:
 - Casing: anodised aluminium
 - Input: non-hardened steel
 - Output: Bronze
 - Stainless steel cap
- Weight: 0,23 kg



Input arrangement



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	10:1	12:1	15:1	20:1	30:1	60:1	120:1
3000	1,40	1,50	1,60	1,70	1,90	2,10	1,25
2000	1,70	1,70	1,80	1,80	2,10	2,40	1,42
1000	2,10	2,30	2,30	2,50	2,70	2,90	1,70
500	2,70	2,70	2,80	2,90	3,20	3,50	1,94
200	3,40	3,50	3,50	3,70	3,90	4,10	2,27
100	3,90	3,90	4,10	4,20	4,30	4,50	2,55
50	4,40	4,50	4,50	4,60	4,70	4,80	2,72
10	4,80	4,80	4,90	4,90	5,00	5,00	2,72

DISCOUNTS

Qty	1+	3+	6+	10+
Disc.	List -10%	-15%	On request	

Part number	Ratio	Reflected Inertia at Input (kg.m ²)	Efficiency at 1000 rpm	Self-locking output	Price each 1 to 2
PF20-10NM	10:1	$2,53 \times 10^{-7}$	86%	NO	306,03 €
PF20-12NM	12:1	$2,43 \times 10^{-7}$	85%	NO	306,03 €
PF20-15NM	15:1	$2,35 \times 10^{-7}$	84%	NO	306,03 €
PF20-20NM	20:1	$2,28 \times 10^{-7}$	78%	NO	306,03 €
PF20-30NM	30:1	$2,24 \times 10^{-7}$	71%	NO	306,03 €
PF20-60NM	60:1	$2,21 \times 10^{-7}$	60%	YES	306,03 €
PF20-120NM	120:1	$2,00 \times 10^{-7}$	32%	YES	306,03 €
PF20-SPNM	5:1 - 120:1	Special ratios from 5:1 to 120:1 or left handed			On request
PF20-ANM		Reduced output backlash $\leq 0^{\circ}8'$			On request

Dimensions in mm

Double reduction worm gearboxes



PP35

Torque up to 4.10Nm

- Ratios from 25:1 to 900:1
- 2-stage reduction
- Output backlash $\leq 55'$ ($0,92^\circ$)
- Max. input speed: 3000 rpm
- Materials:

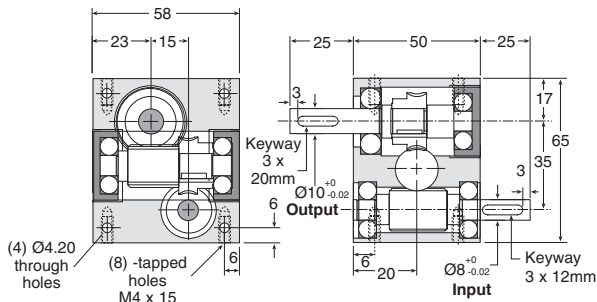
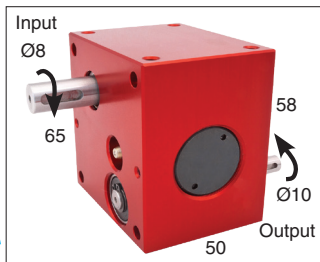
Casing: anodised aluminium
input: non-hardened steel
output: bronze

- Weight: 0.70 kg

Options

- Can be modified to your specifications

Very high reduction ratios



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	100:1	200:1	400:1
3000	2,20	2,30	2,50
2000	2,50	2,70	2,80
1000	2,80	3,00	3,10
INPUT SPEED (rpm)	500	3,10	3,50
	200	3,80	3,90
	100	3,90	4,00
	50	4,00	4,10

DISCOUNTS

Qty	1+	3+	6+	10+
Disc.	List -10%	List -15%	On request	On request

Part number	Ratio	Max. input speed (rpm)	Max. output speed (rpm)	Efficiency at 1000 rpm	Self-locking output	Price each 1 to 5
PP35-100	100:1	3000	30,00	52%	NO	539,35 €
PP35-200	200:1	3000	15,00	45%	NO	539,35 €
PP35-400	400:1	3000	7,50	34%	YES	539,35 €
PP35-SP	25:1 - 900:1		Special ratios from 25:1 to 900:1			On request

Dimensions in mm



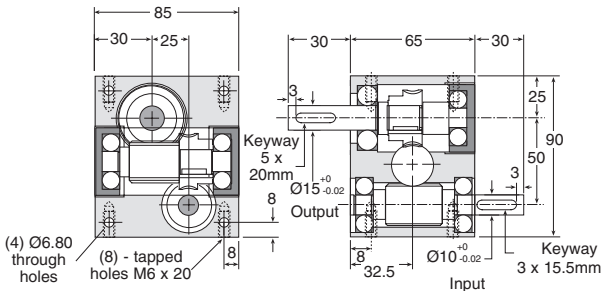
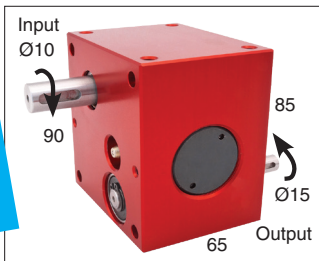
Double reduction worm gearboxes

Torque up to 12.8Nm

PP50

- Ratios from 25:1 to 900:1
- 2-stage reduction
- Output backlash $\leq 55'$ ($0,92^\circ$)
- Max. input speed: 3000 rpm
- Materials:
 - casing: anodised aluminium
 - input: non-hardened steel
 - output: bronze
- Weight: 1.80 kg

Very high reduction ratios



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	100:1	200:1	400:1	
3000	6,50	7,10	8,20	
2000	7,20	7,80	8,90	
1000	8,20	9,00	9,80	
INPUT SPEED (rpm)	500	9,50	10,20	11,50
200	11,00	11,60	12,20	
100	12,00	12,30	12,60	
50	12,70	12,80	12,80	

DISCOUNTS

Qty	1+	2+	4+
Disc.	List -5%	On request	On request

Part number	Ratio	Max. input speed (rpm)	Max. output speed (rpm)	Efficiency at 1000 rpm	Self-locking output	Price each 1 to 5
PP50-100	100:1	3000	30,00	54%	NO	509,82 €
PP50-200	200:1	3000	15,00	48%	NO	509,82 €
PP50-400	400:1	3000	7,50	36%	YES	509,82 €
PP50-SP	25:1 - 900:1	Special ratios from 25:1 to 900:1				On request

Dimensions in mm



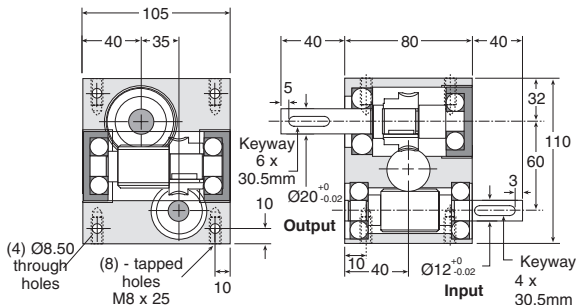
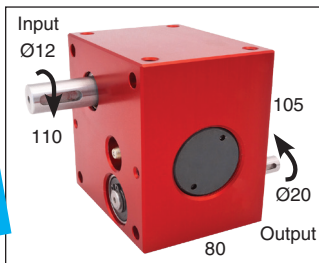
Double reduction worm gearboxes

Torque up to 34Nm

PP60

- Ratios from 25:1 to 900:1
- 2-stage reduction
- Output backlash $\leq 55'$ (0,92°)
- Max. input speed: 3000 rpm
- Materials:
 - Casing: anodised aluminium
 - input: non-hardened steel
 - output: bronze
- Weight: 3.30 kg

Very high reduction ratios



OUTPUT TORQUE (Nm values given as a guide only)

Ratios	100:1	200:1	400:1
3000	17,80	19,40	22,50
2000	20,00	21,60	24,80
1000	22,50	25,00	26,80
500	26,10	28,00	31,60
200	30,50	32,00	34,00
100 (rpm)	33,00	34,00	34,00
50	34,00	34,00	34,00

DISCOUNTS

Qty	1+	2+	4+
Disc.	List	-5%	On request

Part number	Ratio	Max. input speed (rpm)	Max. output speed (rpm)	Efficiency at 1000 rpm	Self-locking output	Price each 1 to 5
PP60-100	100:1	3000	30,00	55%	NO	644,21 €
PP60-200	200:1	3000	15,00	50%	NO	644,21 €
PP60-400	400:1	3000	7,50	37%	YES	644,21 €
PP60-SP	25:1 - 900:1	Special ratios from 25:1 to 900:1				On request

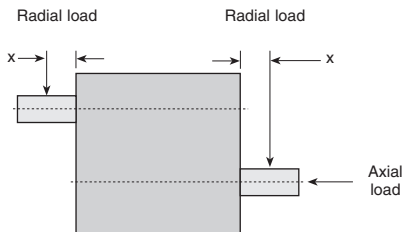
Dimensions in mm

Double reduction gearboxes

PP

Technical information

- **Speed ratio: from 25:1 to 900:1**
- **Materials :**
 - casing anodised aluminium
 - worm steel
 - wheel aluminium bronze
- **Max. speed: 3000 rpm on input**
depending on model
- **Backlash: $\leq 55'$ ($0,92^\circ$) on output**
- **Lubrication: greased for life**
(Shell Gadus S5 V42P 2,5 grease)
- **Guarantee: 13 months**



ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Input Radial load (N)	Output Radial load (N)	Axial load (N)
PP35	12	60	120	100
PP50	20	100	300	200
PP60	25	150	450	300

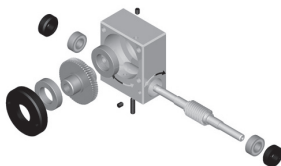
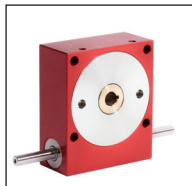
Data given based on input speed of 1,000 rpm.
Values given as an indication only.

Worm and wheel gearboxes

P, P-A
P-AR

Technical information

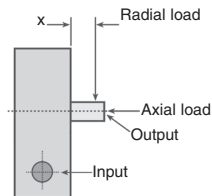
- Ratios: From 5:1 to 120:1
- Materials :
 - Housing - anodised aluminium
 - Worm - Steel
 - Wheel - Aluminium bronze
 - Stainless steel cap
- Max input speed: 3,000 rpm
- Backlash(output): $\leq 0^{\circ}30'$ (P), $\leq 0^{\circ}08'$ (P-A),
 $\leq 0^{\circ}04'$ (P-AR)
- Lubrication: greased for life
(Shell Gadus S5 V42P 2.5 grease)
- Guarantee: 13 months



Standard P
P-A and P-AR range

ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Input radial load (N)	Output Radial load (N)	Axial load (N)
P15	10	10	80	30
P20	10	20	120	50
P30	12	30	200	120
P40	15	50	300	200
P45	20	60	450	300
P55	20	140	600	400
P60	25	160	700	500
P70	30	200	800	600



Data given based on input speed of 1,000 rpm.
values given as an indication only.