

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

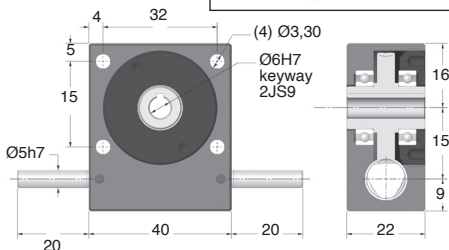
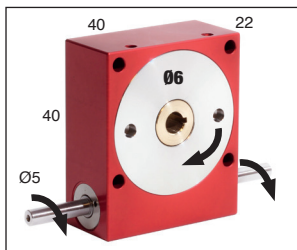
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P20-X et P20-DX
(tome 2 p.168)



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

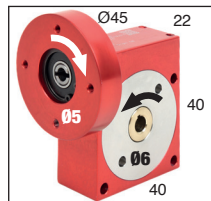
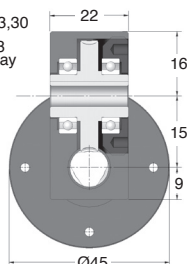
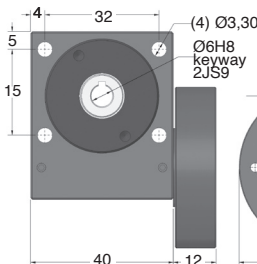
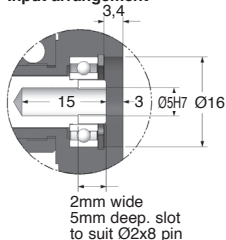
Qty	1+	2+	4+	6+
Disc.	List -10%	-15%	On request	On request

Part number	Ratios	Efficiency at 1000 t/min	Reflected inertia at input (kg.m ²)	Static self-locking output	Stock*	Price each
P15-6	6,66:1	86%	1,79x10 ⁻⁷	NO	-	369,99 €
P15-8	8:1	85%	1,73x10 ⁻⁷	NO	-	369,99 €
P15-10	10:1	84%	1,68x10 ⁻⁷	NO	✓	369,99 €
P15-13	13,33:1	78%	1,65x10 ⁻⁷	NO	-	369,99 €
P15-20	20:1	71%	1,62x10 ⁻⁷	NO	-	369,99 €
P15-40	40:1	60%	1,61x10 ⁻⁷	NO	✓	369,99 €
P15-80	80:1	32%	1,60x10 ⁻⁷	NO	-	369,99 €
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)	Static self-locking output	Price each
PF15-6	6,66:1	86%	1,79x10 ⁻⁷	NO	475,59 €
PF15-8	8:1	85%	1,73x10 ⁻⁷	NO	475,59 €
PF15-10	10:1	84%	1,68x10 ⁻⁷	NO	475,59 €
PF15-13	13,33:1	78%	1,65x10 ⁻⁷	NO	475,59 €
PF15-20	20:1	71%	1,62x10 ⁻⁷	NO	475,59 €
PF15-40	40:1	60%	1,61x10 ⁻⁷	NO	475,59 €
PF15-80	80:1	32%	1,60x10 ⁻⁷	NO	475,59 €
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



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

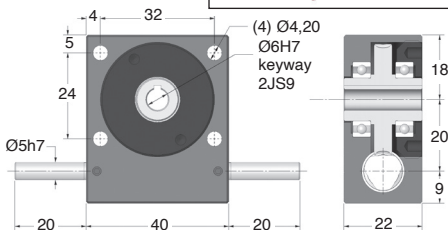
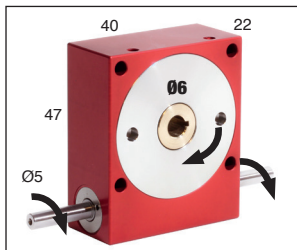
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX
(tome 2 p.168)



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

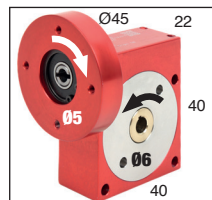
Qty	1+	2+	4+	6+
Disc.	List -10%	List -15%	On request	On request

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Static self-locking output	Stock*	Price each
P20-10	10:1	86%	2,03 x 10 ⁻⁷	NO	-	413,62 €
P20-12	12:1	85%	1,93 x 10 ⁻⁷	NO	-	413,62 €
P20-15	15:1	84%	1,85 x 10 ⁻⁷	NO	✓	413,62 €
P20-20	20:1	78%	1,78 x 10 ⁻⁷	NO	-	413,62 €
P20-30	30:1	71%	1,74 x 10 ⁻⁷	NO	✓	413,62 €
P20-60	60:1	60%	1,71 x 10 ⁻⁷	YES	✓	413,62 €
P20-120	120:1	32%	1,50 x 10 ⁻⁷	YES	✓	413,62 €
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

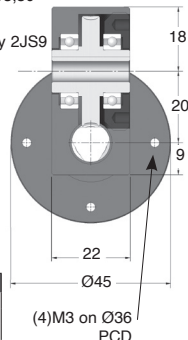
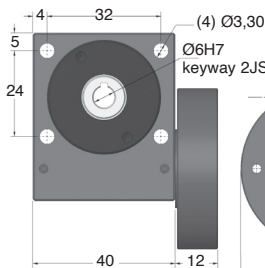
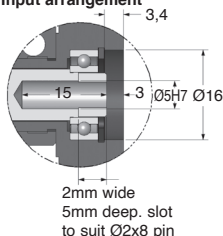
*Depending on availability - Dimensions in mm

- 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)	Static self-locking output	Price each
PF20-10	10:1	86%	2,53 x 10 ⁻⁷	NO	527,38 €
PF20-12	12:1	85%	2,43 x 10 ⁻⁷	NO	527,38 €
PF20-15	15:1	84%	2,35 x 10 ⁻⁷	NO	527,38 €
PF20-20	20:1	78%	2,28 x 10 ⁻⁷	NO	527,38 €
PF20-30	30:1	71%	2,24 x 10 ⁻⁷	NO	527,38 €
PF20-60	60:1	60%	2,21 x 10 ⁻⁷	YES	527,38 €
PF20-120	120:1	32%	2,00 x 10 ⁻⁷	YES	527,38 €
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

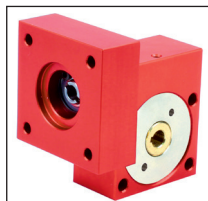


PF20NM

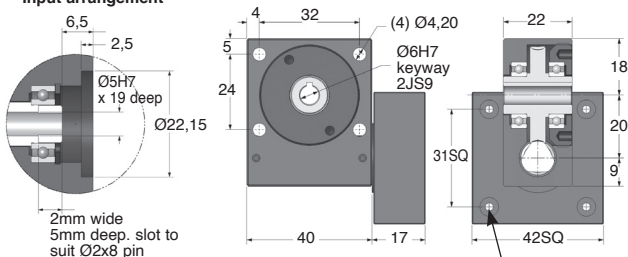
Torque up to 5Nm

**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	527,38 €
PF20-12NM	12:1	$2,43 \times 10^{-7}$	85%	NO	527,38 €
PF20-15NM	15:1	$2,35 \times 10^{-7}$	84%	NO	527,38 €
PF20-20NM	20:1	$2,28 \times 10^{-7}$	78%	NO	527,38 €
PF20-30NM	30:1	$2,24 \times 10^{-7}$	71%	NO	527,38 €
PF20-60NM	60:1	$2,21 \times 10^{-7}$	60%	YES	527,38 €
PF20-120NM	120:1	$2,00 \times 10^{-7}$	32%	YES	527,38 €
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



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24/48 H*

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Worm and wheel gearbox

Stock

1 2 3

★ ★ ★

P30

Torque up to 8.8Nm

- 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: 0,48 kg

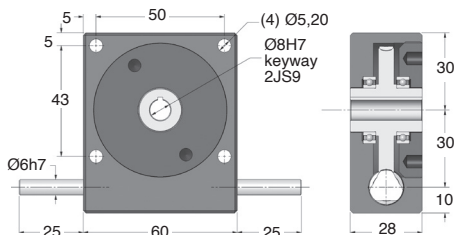
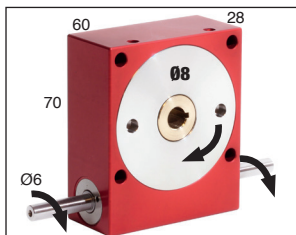
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX
(tome 2 p.168)



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	2,50	2,50	2,60	2,70	3,00	3,50	3,40
2000	2,80	2,90	3,00	3,20	3,60	4,10	3,70
1000	3,50	3,70	4,00	4,20	4,50	5,00	4,60
500	4,60	4,70	4,90	5,10	5,30	5,80	5,40
200	5,40	5,60	5,70	5,90	6,20	6,60	6,40
100	6,00	6,00	6,50	6,50	7,00	7,50	6,70
50	7,50	7,80	8,00	8,30	8,30	8,60	6,70
10	8,00	8,00	8,30	8,50	8,50	8,80	6,70

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)	Static self-locking output	Stock*	Price each
P30-10	10:1	90%	$8,43 \times 10^{-7}$	NO	✓	511,59 €
P30-12	12:1	88%	$7,55 \times 10^{-7}$	NO	-	511,59 €
P30-15	15:1	86%	$6,92 \times 10^{-7}$	NO	-	511,59 €
P30-20	20:1	84%	$6,43 \times 10^{-7}$	NO	-	511,59 €
P30-30	30:1	78%	$6,08 \times 10^{-7}$	NO	-	511,59 €
P30-60	60:1	70%	$5,87 \times 10^{-7}$	YES	✓	511,59 €
P30-120	120:1	40%	$5,72 \times 10^{-7}$	YES	✓	511,59 €
P30-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			-	On request
P30-A		Reduced output backlash $\leq 0^{\circ}8'$			-	On request
P30-AR		Reduced output backlash $\leq 0^{\circ}4'$			-	On request

*Depending on availability - Dimensions in mm



Worm and wheel gearbox

Torque up to 8.8Nm

PF30

- 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

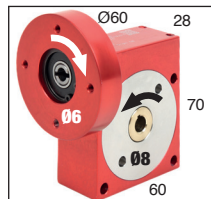
Cap: stainless steel

- The angle of the input flange is not positioned

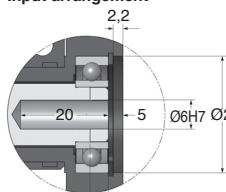
- Verify it is suitable for use with your motor

- Weight: 0,59 kg

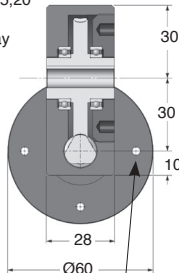
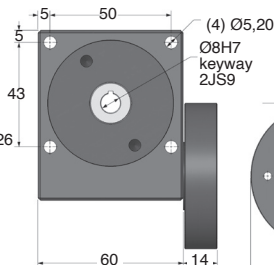
High reduction ratios



Input arrangement



2mm wide 5mm deep.
slot to suit Ø2x14 pin



(4)M4 on Ø46
PCD

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	2,50	2,50	2,60	2,70	3,00	3,50	3,40
2000	2,80	2,90	3,00	3,20	3,60	4,10	3,70
1000	3,50	3,70	4,00	4,20	4,50	5,00	4,60
500	4,60	4,70	4,90	5,10	5,30	5,80	5,40
200	5,40	5,60	5,70	5,90	6,20	6,60	6,40
100	6,00	6,00	6,50	6,50	7,00	7,50	6,70
50	7,50	7,80	8,00	8,30	8,30	8,60	6,70
10	8,00	8,00	8,30	8,50	8,50	8,80	6,70

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)	Static self-locking output	Price each
PF30-10	10:1	90%	$1,00 \times 10^{-6}$	NO	634,35 €
PF30-12	12:1	88%	$9,25 \times 10^{-7}$	NO	634,35 €
PF30-15	15:1	86%	$8,62 \times 10^{-7}$	NO	634,35 €
PF30-20	20:1	84%	$8,13 \times 10^{-7}$	NO	634,35 €
PF30-30	30:1	78%	$7,88 \times 10^{-7}$	NO	634,35 €
PF30-60	60:1	70%	$7,67 \times 10^{-7}$	YES	634,35 €
PF30-120	120:1	40%	$7,42 \times 10^{-7}$	YES	634,35 €
PF30-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			On request
PF30-A		Reduced output backlash $\leq 0^{\circ}8'$			On request
PF30-AR		Reduced output backlash $\leq 0^{\circ}4'$			On request

Dimensions in mm

Worm and wheel gearbox

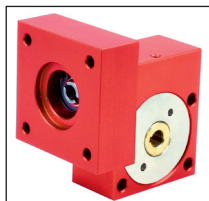


PF30NM

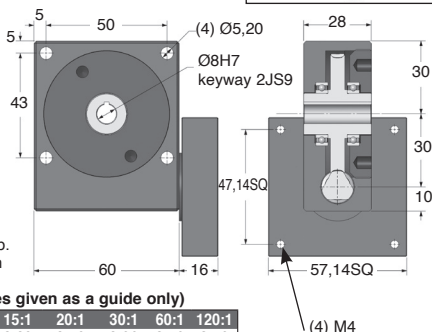
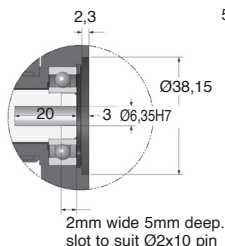
Torque up to 8.8Nm

- 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: 0,59 kg

**NEMA 23
square flange**



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	2,50	2,50	2,60	2,70	3,00	3,50	3,40
2000	2,80	2,90	3,00	3,20	3,60	4,10	3,70
1000	3,50	3,70	4,00	4,20	4,50	5,00	4,60
500	4,60	4,70	4,90	5,10	5,30	5,80	5,40
200	5,40	5,60	5,70	5,90	6,20	6,60	6,40
100	6,00	6,00	6,50	6,50	7,00	7,50	6,70
50	7,50	7,80	8,00	8,30	8,30	8,60	6,70
10	8,00	8,00	8,30	8,50	8,50	8,80	6,70

DISCOUNTS

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

Part number	Ratio	Reflected Inertia at Input (kg.m ²)	Efficiency at 1000 rpm	Self-locking output	Price each 1 to 2
PF30-10NM	10:1	$1,00 \times 10^{-6}$	90%	NO	634,35 €
PF30-12NM	12:1	$9,25 \times 10^{-7}$	88%	NO	634,35 €
PF30-15NM	15:1	$8,62 \times 10^{-7}$	86%	NO	634,35 €
PF30-20NM	20:1	$8,13 \times 10^{-7}$	84%	NO	634,35 €
PF30-30NM	30:1	$7,88 \times 10^{-7}$	78%	NO	634,35 €
PF30-60NM	60:1	$7,67 \times 10^{-7}$	70%	YES	634,35 €
PF30-120NM	120:1	$7,42 \times 10^{-7}$	40%	YES	634,35 €
PF30-SPNM	5:1 - 120:1	Special ratios from 5:1 to 120:1 or left handed			On request
PF30-ANM		Reduced output backlash $\leq 0^{\circ}8'$			On request

Dimensions in mm



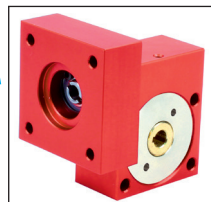
Worm and wheel gearbox

Torque up to 18Nm

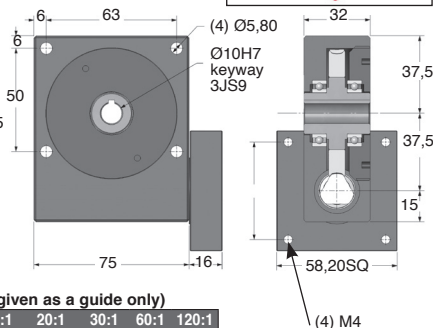
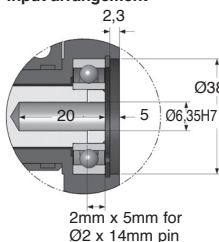
PF40NM

- 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: 1,15 kg

NEMA 23 square flange



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	5,00	5,20	5,40	5,60	6,40	7,20	6,50
2000	5,50	5,80	6,20	6,60	7,30	8,00	7,20
1000	7,10	7,50	8,00	8,20	9,00	10,00	8,70
500	8,90	9,10	9,60	10,00	10,50	11,40	10,20
200	11,60	11,90	12,30	12,50	13,50	14,20	11,70
100	13,40	13,60	14,10	14,60	15,30	16,00	12,30
50	15,10	15,50	16,20	16,40	17,30	17,60	12,30
10	17,60	17,60	17,60	17,70	17,80	18,00	12,30

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
PF40-10NM	10:1	3,78 x 10 ⁻⁶	89%	NO	861,27 €
PF40-12NM	12:1	3,62 x 10 ⁻⁶	87%	NO	861,27 €
PF40-15NM	15:1	3,49 x 10 ⁻⁶	85%	NO	861,27 €
PF40-20NM	20:1	3,39 x 10 ⁻⁶	83%	NO	861,27 €
PF40-30NM	30:1	3,32 x 10 ⁻⁶	76%	NO	861,27 €
PF40-60NM	60:1	3,27 x 10 ⁻⁶	65%	YES	861,27 €
PF40-120NM	120:1	3,26 x 10 ⁻⁶	41%	YES	861,27 €
PF40-SPNM	5:1 - 120:1	Special ratios from 5:1 to 120:1 or left handed			On request
PF40-ANM		Reduced output backlash $\leq 0^{\circ}8'$			On request

Dimensions in mm

Worm and wheel gearbox



P40

Torque up to 18Nm

- Ratios from 5:1 to 120:1
- Output backlash $\leq 0^{\circ}30'$
- Max. input speed: 3,000 rpm
- Materials:
 - Casing: anodised aluminium
 - Input: non-hardened
 - Output: Bronze
 - Cap: stainless steel
- Weight: 0,92 kg

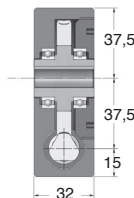
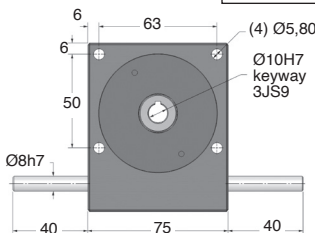
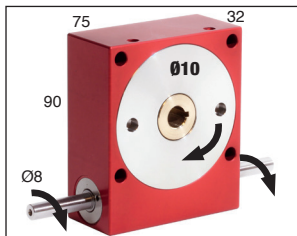
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX
(tome 2 p.168)



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	5,00	5,20	5,40	5,60	6,40	7,20	6,50
2000	5,50	5,80	6,20	6,60	7,30	8,00	7,20
1000	7,10	7,50	8,00	8,20	9,00	10,00	8,70
500	8,90	9,10	9,60	10,00	10,50	11,40	10,20
200	11,60	11,90	12,30	12,50	13,50	14,20	11,70
100	13,40	13,60	14,10	14,60	15,30	16,00	12,30
50	15,10	15,50	16,20	16,40	17,30	17,60	12,30
10	17,60	17,60	17,60	17,70	17,80	18,00	12,30

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Static self-locking output	Stock*	Price each
P40-10	10:1	89%	2,94 x 10 ⁻⁶	NO	✓	693,42 €
P40-12	12:1	87%	2,69 x 10 ⁻⁶	NO	-	693,42 €
P40-15	15:1	85%	2,49 x 10 ⁻⁶	NO	-	693,42 €
P40-20	20:1	83%	2,33 x 10 ⁻⁶	NO	✓	693,42 €
P40-30	30:1	76%	2,22 x 10 ⁻⁶	NO	-	693,42 €
P40-60	60:1	65%	2,15 x 10 ⁻⁶	YES	✓	693,42 €
P40-120	120:1	41%	2,10 x 10 ⁻⁶	YES	-	693,42 €
P40-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			-	On request
P40-A		Reduced output backlash $\leq 0^{\circ}8'$			-	On request
P40-AR		Reduced output backlash $\leq 0^{\circ}4'$			-	On request

*Depending on availability - Dimensions in mm



Worm and wheel gearbox

Torque up to 18Nm

PF40

- Ratios from 5:1 to 120:1

- Output backlash $\leq 0^{\circ}30'$

- Max input speed: 3,000 rpm

- Materials:

Casing: Anodised aluminium

Input: non-hardened steel

Output: Bronze

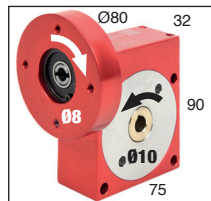
Cap: stainless steel

- The angle of the input flange is not positioned

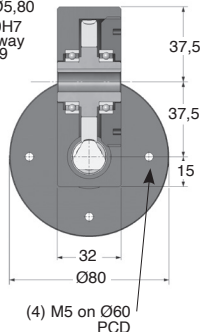
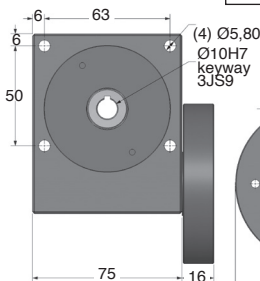
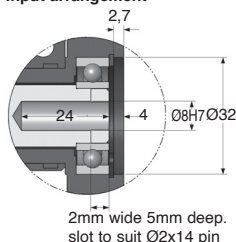
- Verify it is suitable for use with your motor

- Weight: 1,15 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	5,00	5,20	5,40	5,60	6,40	7,20	6,50
2000	5,50	5,80	6,20	6,60	7,30	8,00	7,20
1000	7,10	7,50	8,00	8,20	9,00	10,00	8,70
500	8,90	9,10	9,60	10,00	10,50	11,40	10,20
200	11,60	11,90	12,30	12,50	13,50	14,20	11,70
100	13,40	13,60	14,10	14,60	15,30	16,00	12,30
50	15,10	15,50	16,20	16,40	17,30	17,60	12,30
10	17,60	17,60	17,60	17,70	17,80	18,00	12,30

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)	Anti-back drive	Price each
PF40-10	10:1	89%	$3,78 \times 10^{-6}$	NO	861,27 €
PF40-12	12:1	87%	$3,62 \times 10^{-6}$	NO	861,27 €
PF40-15	15:1	85%	$3,49 \times 10^{-6}$	NO	861,27 €
PF40-20	20:1	83%	$3,39 \times 10^{-6}$	NO	861,27 €
PF40-30	30:1	76%	$3,32 \times 10^{-6}$	NO	861,27 €
PF40-60	60:1	65%	$3,27 \times 10^{-6}$	YES	861,27 €
PF40-120	120:1	41%	$3,26 \times 10^{-6}$	YES	861,27 €
PF40-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			On request
PF40-A		Reduced output backlash $\leq 0^{\circ}8'$			On request
PF40-AR		Reduced output backlash $\leq 0^{\circ}4'$			On request

Dimensions in mm

Worm and wheel gearbox



P45

Torque up to 40Nm

- 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: 1,70 kg

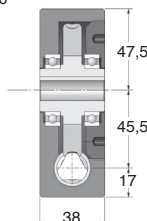
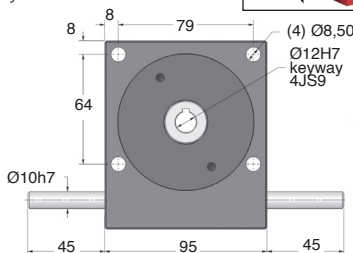
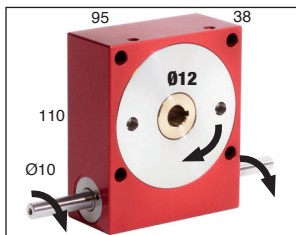
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX
(tome 2 p.168)



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	10,30	10,80	11,30	12,20	13,20	14,70	10,80
2000	11,70	12,20	12,70	13,20	14,70	17,10	12,70
1000	14,70	15,20	16,20	17,10	18,10	20,60	14,30
500	19,10	19,60	20,60	21,60	22,50	24,50	17,50
200	24,40	25,50	26,40	27,00	28,90	30,00	20,60
100	28,30	28,90	29,40	30,30	31,80	33,80	22,80
50	32,30	32,80	33,80	34,30	34,50	35,20	23,00
10	39,90	39,90	39,90	40,00	40,00	40,00	23,00

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Stock*	Price each
P45-10	10:1	90%	6,15 x 10 ⁻⁶	NO	✓	835,69 €
P45-12	12:1	89%	5,32 x 10 ⁻⁶	NO	-	835,69 €
P45-15	15:1	86%	4,64 x 10 ⁻⁶	NO	-	835,69 €
P45-20	20:1	85%	4,11 x 10 ⁻⁶	NO	✓	835,69 €
P45-30	30:1	78%	3,73 x 10 ⁻⁶	NO	✓	835,69 €
P45-60	60:1	67%	3,51 x 10 ⁻⁶	YES	✓	835,69 €
P45-120	120:1	47%	2,88 x 10 ⁻⁶	YES	✓	835,69 €
P45-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			-	On request
P45-A		Reduced output backlash $\leq 0^{\circ}8'$			-	On request
P45-AR		Reduced output backlash $\leq 0^{\circ}4'$			-	On request

*Depending on availability - Dimensions in mm



Worm and wheel gearbox

Torque up to 40Nm

PF45

- 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

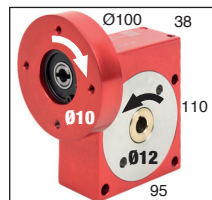
Cap: stainless steel

- The angle of the input flange is not positioned

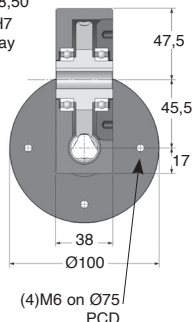
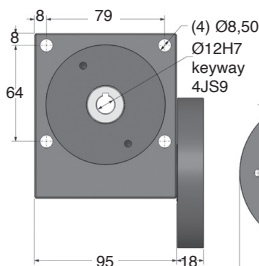
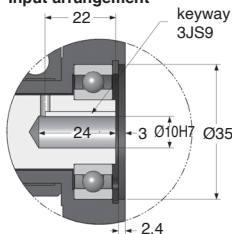
- Verify it is suitable for use with your motor

- Weight: 2,10 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	10,30	10,80	11,30	12,20	13,20	14,70	10,80
2000	11,70	12,20	12,70	13,20	14,70	17,10	12,70
1000	14,70	15,20	16,20	17,10	18,10	20,60	14,30
500	19,10	19,60	20,60	21,60	22,50	24,50	17,50
200	24,40	25,50	26,40	27,00	28,90	30,00	20,60
100	28,30	28,90	29,40	30,30	31,80	33,80	22,80
50	32,30	32,80	33,80	34,30	34,50	35,20	23,00
10	39,90	39,90	39,90	40,00	40,00	40,00	23,00

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Price each
PF45-10	10:1	90%	$7,34 \times 10^{-6}$	NO	1 037,94 €
PF45-12	12:1	89%	$6,84 \times 10^{-6}$	NO	1 037,94 €
PF45-15	15:1	86%	$6,43 \times 10^{-6}$	NO	1 037,94 €
PF45-20	20:1	85%	$6,09 \times 10^{-6}$	NO	1 037,94 €
PF45-30	30:1	78%	$5,86 \times 10^{-6}$	NO	1 037,94 €
PF45-60	60:1	67%	$5,70 \times 10^{-6}$	YES	1 037,94 €
PF45-120	120:1	47%	$5,66 \times 10^{-6}$	YES	1 037,94 €
PF45-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			On request
PF45-A		Reduced output backlash $\leq 0^{\circ}8'$			On request
PF45-AR		Reduced output backlash $\leq 0^{\circ}4'$			On request

Dimensions in mm

Worm and wheel gearbox

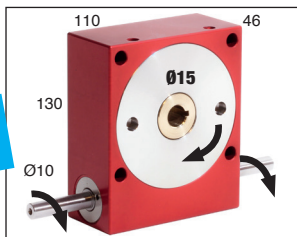


P55

Torque up to 57Nm

- 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: 2,40 kg

High reduction ratios

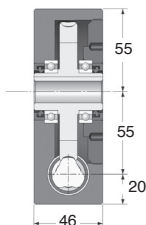
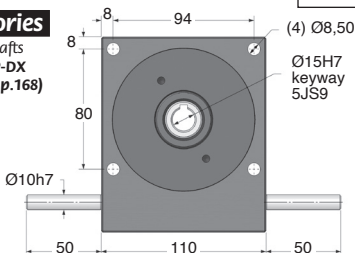


Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX
(tome 2 p.168)



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	13,40	14,00	14,80	16,20	17,60	20,40	18,00
2000	16,20	16,90	18,30	19,10	20,40	23,90	20,00
1000	21,10	22,50	23,20	24,60	25,30	28,80	25,00
500	27,40	28,10	28,80	30,20	31,60	35,10	30,00
200	34,40	35,10	36,50	37,90	39,30	42,10	36,00
100	40,00	41,40	42,10	42,80	44,90	46,30	38,00
50	45,60	46,30	47,70	48,40	49,80	50,50	38,00
10	56,80	56,80	56,80	57,00	57,00	57,00	38,00

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Stock*	Price each
P55-10	10:1	89%	1,35 x 10 ⁻⁵	NO	✓	990,35 €
P55-12	12:1	88%	1,13 x 10 ⁻⁵	NO	✓	990,35 €
P55-15	15:1	86%	9,81 x 10 ⁻⁶	NO	✓	990,35 €
P55-20	20:1	84%	8,63 x 10 ⁻⁶	NO	-	990,35 €
P55-30	30:1	78%	7,79 x 10 ⁻⁶	NO	-	990,35 €
P55-60	60:1	69%	7,23 x 10 ⁻⁶	YES	✓	990,48 €
P55-120	120:1	47%	7,04 x 10 ⁻⁶	YES	-	990,35 €
P55-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			-	On request
P55-A		Reduced output backlash $\leq 0^{\circ}8'$			-	On request
P55-AR		Reduced output backlash $\leq 0^{\circ}4'$			-	On request

*Depending on availability - Dimensions in mm



Worm and wheel gearbox

Torque up to 57Nm

PF55

- 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

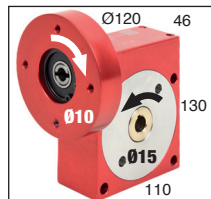
Cap: stainless steel

- The angle of the input flange is not aligned

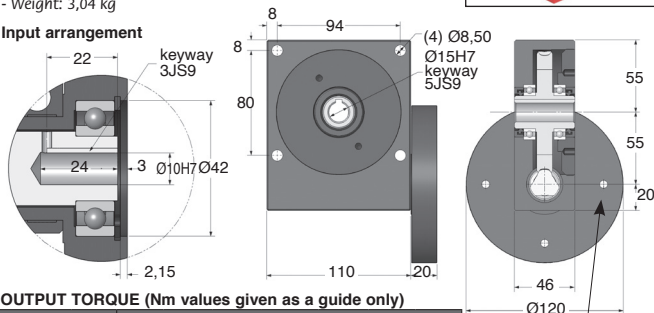
- Verify it is suitable for use with your motor

- Weight: 3,04 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	13,40	14,00	14,80	16,20	17,60	20,40	18,00
2000	16,20	16,90	18,30	19,10	20,40	23,90	20,00
1000	21,10	22,50	23,20	24,60	25,30	28,80	25,00
500	27,40	28,10	28,80	30,20	31,60	35,10	30,00
200	34,40	35,10	36,50	37,90	39,30	42,10	36,00
100	40,00	41,40	42,10	42,80	44,90	46,30	38,00
50	45,60	46,30	47,70	48,40	49,80	50,50	38,00
10	56,80	56,80	56,80	57,00	57,00	57,00	38,00

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Price each
PF55-10	10:1	89%	$1,96 \times 10^{-5}$	NO	1 230,16 €
PF55-12	12:1	88%	$1,84 \times 10^{-5}$	NO	1 230,16 €
PF55-15	15:1	86%	$1,74 \times 10^{-5}$	NO	1 230,16 €
PF55-20	20:1	84%	$1,67 \times 10^{-5}$	NO	1 230,16 €
PF55-30	30:1	78%	$1,62 \times 10^{-5}$	NO	1 230,16 €
PF55-60	60:1	69%	$1,58 \times 10^{-5}$	YES	1 230,16 €
PF55-120	120:1	47%	$1,57 \times 10^{-5}$	YES	1 230,16 €
PF55-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			On request
PF55-A		Reduced output backlash $\leq 0^{\circ}8'$			On request
PF55-AR		Reduced output backlash $\leq 0^{\circ}4'$			On request

Dimensions in mm

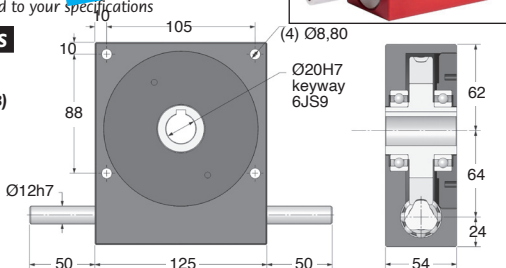
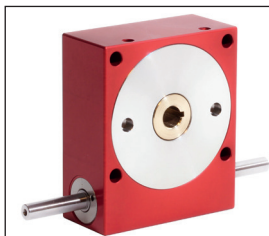
Torque up to 118Nm

- ## Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX
(tome 2 p.168)



OUTPUT TORQUE (Nm values given as a guide only)

Ratios		10:1	12:1	15:1	20:1	30:1	60:1	120:1
INPUT SPEED (rpm)	3000	30	31	33	35	38	44	27
	2000	33	36	39	41	44	50	32
	1000	45	47	50	54	58	64	39
	500	58	60	62	65	69	73	47
	200	77	78	80	84	88	94	55
	100	88	89	91	94	97	105	61
	50	100	102	104	105	107	110	66
	10	113	114	115	116	116	118	66

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Stock*	Price each
P60-10	10:1	90%	2,93 x 10 ⁻⁵	NO	✓	1 251,95 €
P60-12	12:1	89%	2,46 x 10 ⁻⁵	NO	-	1 251,95 €
P60-15	15:1	85%	2,08 x 10 ⁻⁵	NO	-	1 251,95 €
P60-20	20:1	85%	1,78 x 10 ⁻⁵	NO	-	1 251,95 €
P60-30	30:1	78%	1,57 x 10 ⁻⁵	NO	✓	1 251,95 €
P60-60	60:1	68%	1,44 x 10 ⁻⁵	YES	✓	1 251,95 €
P60-120	120:1	45%	9,54 x 10 ⁻⁶	YES	-	1 251,95 €
P60-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			-	On request
P60-A		Reduced output backlash ≤ 0°8'			-	On request
P60-AR		Reduced output backlash ≤ 0°4'			-	On request

*Depending on availability - Dimensions in mm



Worm and wheel gearbox

Torque up to 118Nm

PF60

- 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

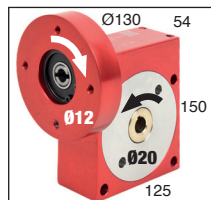
Cap: stainless steel

- The angle of the input flange is not positioned

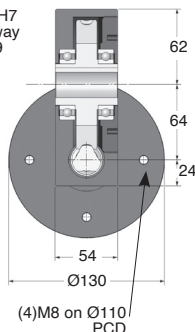
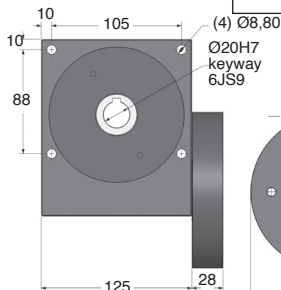
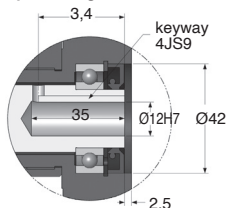
- Verify it is suitable for use with your motor

- Weight: 5,10 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	30	31	33	35	38	44	27
2000	33	36	39	41	44	50	32
1000	45	47	50	54	58	64	39
500	58	60	62	65	69	73	47
200	77	78	80	84	88	94	55
100	88	89	91	94	97	105	61
50	100	102	104	105	107	110	66
10	113	114	115	116	116	118	66

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Price each
PF60-10	10:1	90%	$3,80 \times 10^{-5}$	NO	1 387,79 €
PF60-12	12:1	89%	$3,68 \times 10^{-5}$	NO	1 387,79 €
PF60-15	15:1	85%	$3,14 \times 10^{-5}$	NO	1 387,79 €
PF60-20	20:1	85%	$3,10 \times 10^{-5}$	NO	1 387,79 €
PF60-30	30:1	78%	$2,88 \times 10^{-5}$	NO	1 387,79 €
PF60-60	60:1	68%	$2,82 \times 10^{-5}$	YES	1 387,79 €
PF60-120	120:1	45%	$2,79 \times 10^{-5}$	YES	1 387,79 €
PF60-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			On request
PF60-A		Reduced output backlash $\leq 0^{\circ}8'$			On request
PF60-AR		Reduced output backlash $\leq 0^{\circ}4'$			On request

Dimensions in mm

Worm and wheel gearbox

Stock

1 2 3

P70

Torque up to 164Nm

- 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: 6,40 kg

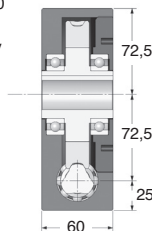
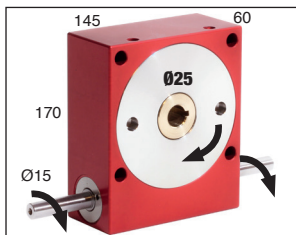
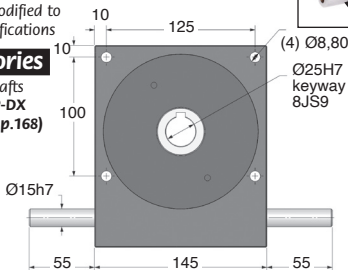
High reduction ratios

Options

- Can be modified to your specifications

Accessories

- Output shafts
P-X and P-DX
(tome 2 p.168)



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	38	40	42	45	50	56	38
2000	47	49	53	55	61	69	46
1000	61	65	67	71	73	83	55
500	77	81	83	87	91	100	66
200	99	101	105	107	113	121	77
100	115	119	121	123	129	133	86
50	129	133	137	139	144	146	90
10	160	160	160	164	164	164	90

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Stock*	Price each
P70-10	10:1	90%	6,04 x 10 ⁻⁵	NO	-	1 390,23 €
P70-12	12:1	89%	5,03 x 10 ⁻⁵	NO	-	1 390,23 €
P70-15	15:1	86%	4,21 x 10 ⁻⁵	NO	-	1 390,23 €
P70-20	20:1	85%	3,57 x 10 ⁻⁵	NO	✓	1 390,23 €
P70-30	30:1	78%	3,11 x 10 ⁻⁵	NO	✓	1 390,23 €
P70-60	60:1	67%	2,84 x 10 ⁻⁵	YES	✓	1 390,23 €
P70-120	120:1	50%	2,48 x 10 ⁻⁵	YES	-	1 390,23 €
P70-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			-	On request
P70-A		Reduced output backlash $\leq 0^{\circ}8'$			-	On request
P70-AR		Reduced output backlash $\leq 0^{\circ}4'$			-	On request

*Depending on availability - Dimensions in mm



Worm and wheel gearbox

Torque up to 164Nm

PF70

- 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

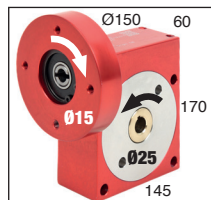
Cap: stainless steel

- The angle of the input flange is not positioned

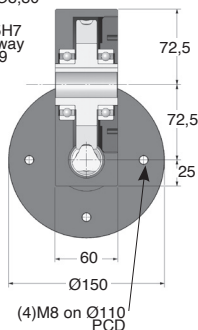
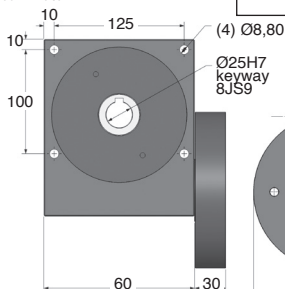
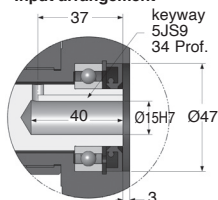
- Verify it is suitable for use with your motor

- Weight: 7,90 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	38	40	42	45	50	56	38
2000	47	49	53	55	61	69	46
1000	61	65	67	71	73	83	55
500	77	81	83	87	91	100	66
200	99	101	105	107	113	121	77
100	115	119	121	123	129	133	86
50	129	133	137	139	144	146	90
10	160	160	160	164	164	164	90

DISCOUNTS

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

Part number	Ratios	Efficiency at 1000 rpm	Reflected inertia at input (kg.m ²)	Self-locking output	Price each
PF70-10	10:1	90%	$4,81 \times 10^{-5}$	NO	1 565,02 €
PF70-12	12:1	89%	$4,19 \times 10^{-5}$	NO	1 565,02 €
PF70-15	15:1	86%	$3,70 \times 10^{-5}$	NO	1 565,02 €
PF70-20	20:1	85%	$3,28 \times 10^{-5}$	NO	1 565,02 €
PF70-30	30:1	78%	$3,00 \times 10^{-5}$	NO	1 565,02 €
PF70-60	60:1	67%	$2,89 \times 10^{-5}$	YES	1 565,02 €
PF70-120	120:1	50%	$2,76 \times 10^{-5}$	YES	1 565,02 €
PF70-SP	5:1-120:1	Ratios from 5:1 to 120:1 or left handed			On request
PF70-A		Reduced output backlash $\leq 0^{\circ}8'$			On request
PF70-AR		Reduced output backlash $\leq 0^{\circ}4'$			On request

Dimensions in mm

Output shaft **stainless steel**

Stock

Px
PDX

For P and PF gearboxes

- **Optional accessory for adding outputs shafts**
to P and PF gearboxes

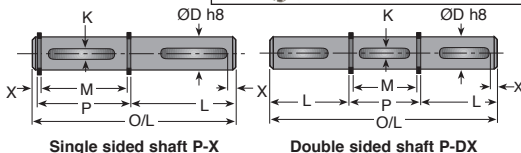
Composition

- Single sided shaft kit P-X: Stainless steel 303 shaft, 2 steel keys and 2 steel circlips
- Double sided shaft kit P-DX: Stainless steel 303 shaft, 3 steel keys and 2 steel circlips



Accessories

- Gearbox P
(tome 2 p.150 to 167)



Single sided shaft P-X

Double sided shaft P-DX

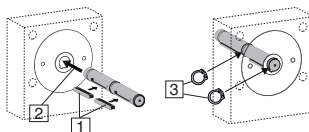
Single sided



Double sided



Typical applications

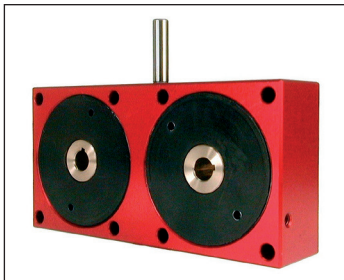


DISCOUNTS

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

For		ØD	O/L	M	P	X	L	K	Stock*	Price each
Part number	gearbox									
Single sided										
P20-X	P20-PF20	6	50,80	22	23,60	3,00	25	K2 x 22	✓	51,72 €
P30-X	P30-PF30	8	63,90	28	29,80	3,00	32	K2 x 22	✓	60,79 €
P40-X	P40-PF40	10	76,60	32	34,20	3,50	40	K3 x 20	✓	68,33 €
P45-X	P45-PF45	12	88,10	38	40,20	4,00	45	K4 x 25	-	73,40 €
P55-X	P55-PF55	15	101,10	46	48,20	4,00	50	K5 x 30	-	81,29 €
P60-X	P60-PF60	20	119,80	54	56,60	4,50	60	K6 x 32	-	95,57 €
P70-X	P70-PF70	25	135,80	60	62,60	4,50	70	K8 x 40	-	109,82 €
Double sided										
P20-DX	P20-PF20	6	73,60	22	23,60	1,50	25	K2 x 22	-	68,12 €
P30-DX	P30-PF30	8	93,80	28	29,80	5,45	32	K2 x 22	-	74,05 €
P40-DX	P40-PF40	10	114,20	32	34,20	9,90	40	K3 x 20	-	84,79 €
P45-DX	P45-PF45	12	130,20	38	40,20	4,00	45	K4 x 25	-	92,66 €
P55-DX	P55-PF55	15	148,20	46	48,20	9,90	50	K5 x 30	-	100,96 €
P60-DX	P60-PF60	20	176,60	54	56,60	4,50	60	K6 x 32	-	117,40 €
P70-DX	P70-PF70	25	202,50	60	62,60	4,50	70	K8 x 40	-	133,83 €

*Depending on availability - Dimensions in mm

Standard gearboxes

We can easily adapt our standard gearboxes to meet your specific requirements.

On request and with no minimum order, we can manufacture :

- different shaft lengths and diameters
 - other bore diameters (metric or imperial)
 - flat plates, keyways, circlip grooves...
 - addition of channelled or threaded rings
 - custom-made parts from a drawing, specification or sample.
- To find out more, contact our technical team.

Custom made gearboxes built to order

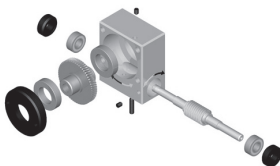
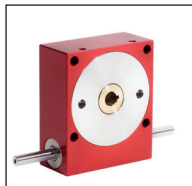
- Please send your request for a custom made gearbox to our technical department : cial2@hpceurope.com

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**
- **Lubrication temperature :**
max operating 60°C
- **Cooling may be needed dependent**
on application

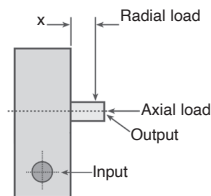


**Standard P
P-A and P-AR range**

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.

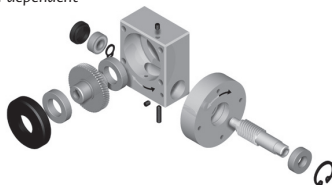
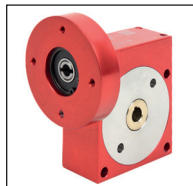


Worm and wheel gearboxes with input flange

Technical information

PF, PF-A
PF-AR

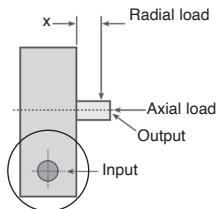
- **Ratios: From 5:1 to 120:1**
- **Materials :**
 - Housing - anodised aluminium
 - Worm - Steel
 - Wheel - Aluminium bronze
 - Stainless steel cap
- Max input speed: 3,000 rpm
- Backlash(output): $\leq 0^{\circ}30'$ (PF),
 $\leq 0^{\circ}08'$ (PF-A), $\leq 0^{\circ}04'$ (PF-AR)
- Lubrication: greased for life
(Shell Gadus S5 V42P 2.5)
- Guarantee: 13 months
- Lubrication temperature :
max operating 60°C
- Cooling may be needed dependent
on application



Standard PF
PF-A and PF-AR range

ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Input Radial load (N)	Output Radial load (N)	Axial load (N)
PF15	10	10	80	30
PF20	10	20	120	50
PF30	12	30	200	120
PF40	15	50	300	200
PF45	20	60	450	300
PF55	20	140	600	400
PF60	25	160	700	500
PF70	30	200	800	600



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

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°)
- Max. input speed: 3000 rpm
- Materials:

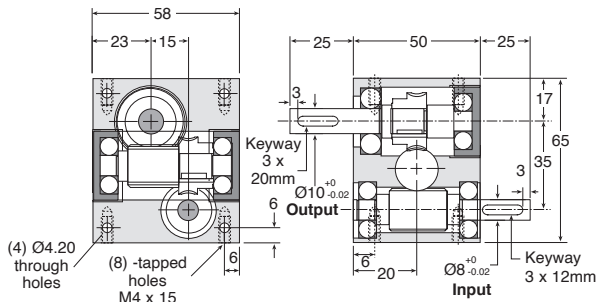
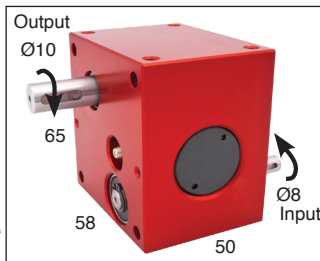
Casing: anodised aluminium
input: non-hardened steel
output: bronze

- 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
500	3,10	3,50	3,60
200	3,80	3,90	4,00
100	3,90	4,00	4,00
50	4,00	4,10	4,10

DISCOUNTS

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

Part number	Ratio	Max. input speed (rpm)	Max. output speed (rpm)	Efficiency at 1000 rpm	Static self-locking output	Price each
PP35-100	100:1	3000	30,00	52%	NO	929,52 €
PP35-200	200:1	3000	15,00	45%	NO	929,52 €
PP35-400	400:1	3000	7,50	34%	YES	929,52 €
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

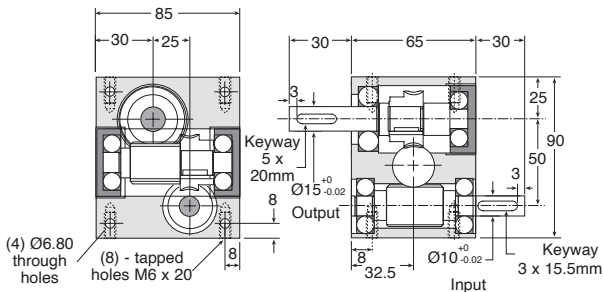
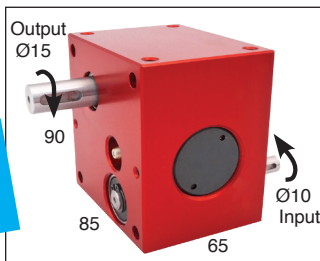
PP50

- 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

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	6,50	7,10	8,20
2000	7,20	7,80	8,90
1000	8,20	9,00	9,80
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

Part number	Ratio	Max. input speed (rpm)	Max. output speed (rpm)	Efficiency at 1000 rpm	Static self-locking output	Price each
PP50-100	100:1	3000	30,00	54%	NO	966,48 €
PP50-200	200:1	3000	15,00	48%	NO	966,48 €
PP50-400	400:1	3000	7,50	36%	YES	966,48 €
PP50-SP	25:1 - 900:1	Special ratios from 25:1 to 900:1				On request

Dimensions in mm

Double reduction worm gearboxes



PP60

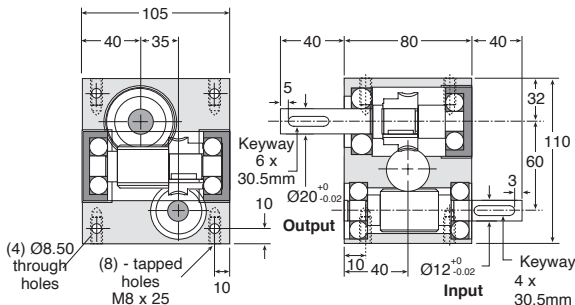
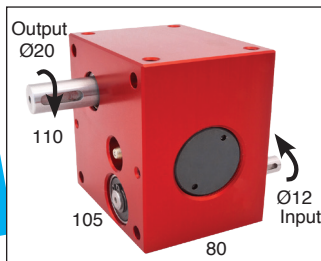
Torque up to 34Nm

- 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: 3.30 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	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	Static self-locking output	Price each
PP60-100	100:1	3000	30,00	55%	NO	1 221,25 €
PP60-200	200:1	3000	15,00	50%	NO	1 221,25 €
PP60-400	400:1	3000	7,50	37%	YES	1 221,25 €
PP60-SP	25:1 - 900:1	Special ratios from 25:1 to 900:1				On request

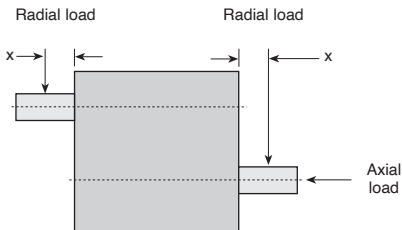
Dimensions in mm

Double reduction gearboxes

Technical information

PP

- **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
- Lubrication temperature :
max operating 60°C
- Cooling may be needed dependent
on application



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.