

CHM and CHMR gear gearboxes

CHM CHMR

Technical information

Maximum output load

When used with a double output shaft, the total of the combined loads should not exceed the values given in the table below

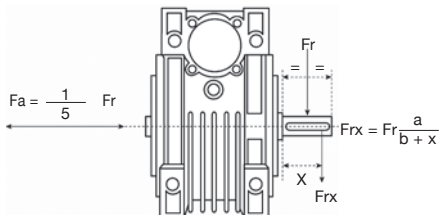
Loads are given for a speed of 10 rpm are the maximum loads that the gear reducers can accept.

- a : Gear constant
b : Gear constant
x : Load distance
from shaft shoulder (mm)

Fr_x : Radial load
in position X (N)

Fr : Radial load (N)

Fa : Axial load (N)



Maximum output load (NB Speeds given are a guide only)

Sizes	CHM30	CHM40	CHM50	CHM63	CHM75	CHM90	CHM110
400	530	1020	1400	1830	2160	2390	3530
250	620	1200	1650	2150	2520	2800	4130
150	740	1420	1960	2540	2990	3310	4890
100	850	1620	2250	2910	3430	3800	5600
60	1000	1920	2660	3450	4060	4500	6640
40	1150	2200	3050	3950	4650	5150	7600
25	1350	2570	3570	4620	5440	6020	8890
10	1830	3490	4840	6270	7380	8180	12000

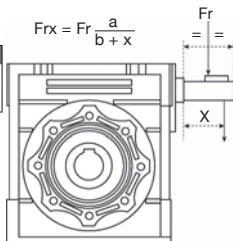
Values of gear constants

Sizes	CHM30	CHM40	CHM50	CHM63	CHM75	CHM90	CHM110
a	65	84	101	120	131	162	176
b	50	64	76	95	101	122	136

Maximum radial input loads

Values of gear constants

Sizes	CHM30	CHM40	CHM50	CHM63	CHM75	CHM90	CHM110
a	86	106	129	159	192	227	266
b	76	94	114	139	167	202	236
Fr maxi.	210	350	490	700	980	1270	1700



For the CHM110 and CHMR110

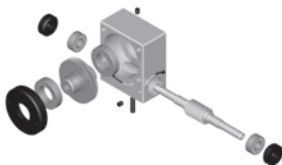
- It is the user's responsibility to fill the housing with oil before use (approx 3l).
- The oil should be changed after 300 hours of use.

Worm and wheel gear gearboxes

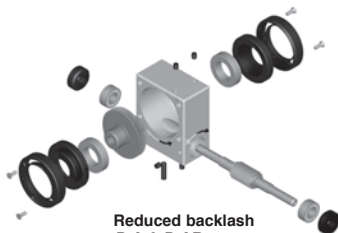
Technical information

P, P-A
P-AR

- Ratios: From 5:1 to 120:1
- Materials :
 - Housing - anodised aluminium (6082)
 - Worm - Steel (35NCD6)
 - Wheel - Aluminium bronze (CuAl10Ni5Fe4)
- Max input speed: 3,000 rpm
- Backlash(output): $\approx 0^{\circ}30'$ (P), $\approx 0^{\circ}08'$ (P-A), $\approx 0^{\circ}04'$ (P-AR)
- Lubrication: greased for life (Shell Nerita HV grease)
- Guaranty: 13 months
- Tolerances :
 - PCD \varnothing : -0.15 mm
 - Centres: +0.00/+0.05



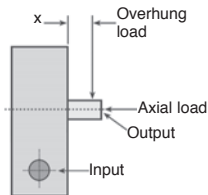
Standard P range



Reduced backlash
P-A & P-AR range

ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Output Overhung load (kg)	Axial load (kg)	Input Overhung load (kg)
P15	10	8	3	4
P20	10	12	5	6
P30	12	20	12	8
P40	15	30	20	10
P45	20	45	30	12
P55	20	60	40	14
P60	25	70	50	16
P70	30	80	60	20



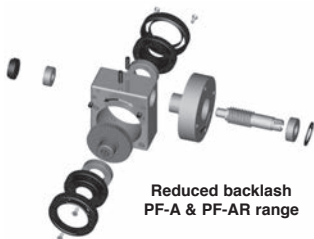
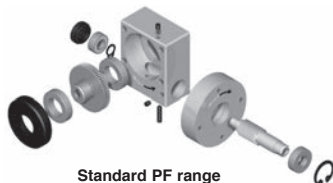
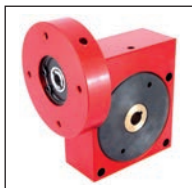
Data given based on input speed of 1000 rpm.
Values given as an indication only.

Worm and wheel gear gearboxes with input flange

PF, PF-A PF-AR

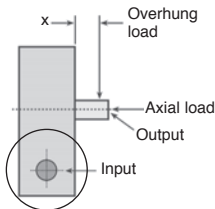
Technical information

- Ratios: From 5:1 to 120:1
- Materials :
 - Housing - anodised aluminium (6082)
 - Worm - Steel (35NCD6)
 - Wheel - Aluminium bronze (CuAl10Ni5Fe4)
- Max input speed: 3,000 rpm
- Backlash(output): $\approx 0^{\circ}30'$ (PF), $\approx 0^{\circ}08'$ (PF-A), $\approx 0^{\circ}04'$ (PF-AR)
- Lubrication: greased for life (Shell Nerita HV grease)
- Guaranty: 13 months
- Tolerances :
 - PCD \varnothing : -0.15 mm
 - Centres: +0.00/+0.05
 - for the reduced backlash versions, the wheel being eccentrically mounted, the distance between centres can vary by several tenths.



ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Output Overhung load (kg)	Axial load (kg)
PF15	10	8	3
PF20	10	12	5
PF30	12	20	12
PF40	15	30	20
PF45	20	45	30
PF55	20	60	40
PF60	25	70	50
PF70	30	80	60



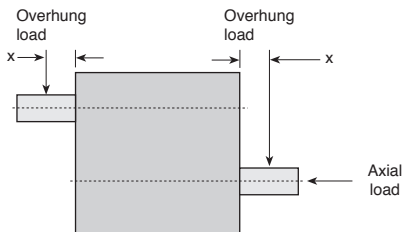
Data given based on input speed of 1000 rpm.
values given as an indication only.

Double reduction gear gearboxes

Technical information

PP

- **Speed ratio: from 25:1 to 900:1**
- **Materials :**
 - casing 6082 anodised aluminium
 - worm steel 35NCD6
 - wheel CuAl10Ni5Fe4 aluminium bronze
- **Max. speed: 3000 rpm on input**
depending on model
- **Backlash: $\approx 2^\circ$ on output**
- **Lubrication: greased for life**
(Shell Nerita HV grease)
- **Guarantee: 13 months**
- **Tolerances :**
 - Centres: $+0.00/+0.05$
 - PCD \varnothing : -0.15 mm



ADMISSIBLE LOADS

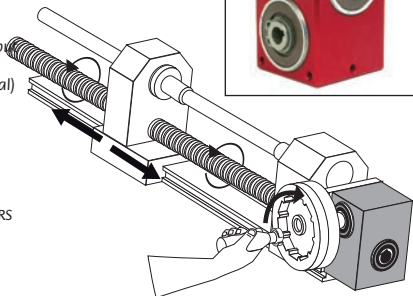
Part number	Distance 'X' (mm)	Output Overhung load (kg)	Axial load (kg)	Input Overhung load (kg)
PP35	12	12	10	6
PP50	20	30	20	10
PP60	25	45	35	15

Data given based on input speed of 1000 rpm.
values given as an indication only.

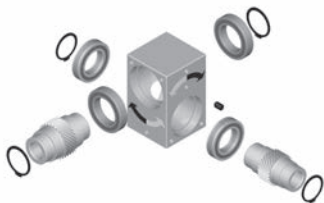
Crossed axis gear gearboxes

E Technical information

- **Speed ratio: from 1:1 to 40:1**
- **Materials :**
casing 6082 anodised aluminium
gears in 20NCD2 case hardened
(ratio >8 : output CuAl10Ni5Fe4 aluminium bronze)
- **Max. speed: 3000 to 4000 rpm** at input depending on model
- **Backlash(output): $\approx 1^\circ$** ($0^\circ 30'$ optional)
- **Lubrication: greased for life** (Shell Alvania HDX2 grease)
- **Guarantee: 13 months**
- **Tolerances :**
• PCD \varnothing : -0.15 mm
• Centres: +0.00/+0.05
- **Steel bearing with single ball race 2RS**



Typical application



Left handed teeth (LH)

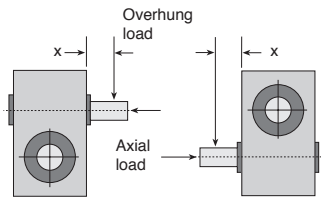


Right handed teeth (RH)

ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Overhung load (kg)	Axial load (kg)
E15	6	15	10
E20	6	15	10
E30	10	20	15
E40	12	40	30
E50	20	60	40
E60	25	80	50
E60B	25	80	50

Data given based on input speed of 1000 rpm.
values given as an indication only.

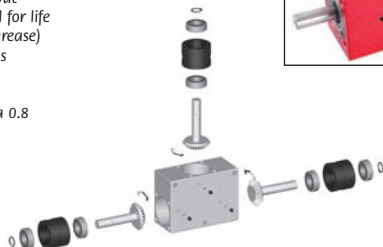
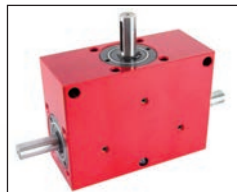


Double output bevel gearbox

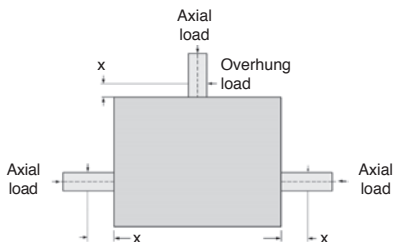
Technical information

BLHM

- **Speed ratio: from 1:1 to 2:1**
- **Materials :**
 - casing 6082 anodised aluminium
 - gears in heat treated steel (20NCD2)
- **ax. speed: 2000 to 4000 rpm on input depending on model**
- **Backlash: $\approx 1^\circ$ on output**
- **Lubrication: greased for life (Shell Alvania HDX2 grease)**
- **Guarantee: 13 months**
- **Tolerances:**
 - PCD \varnothing : -0.15 mm
 - ground shafts h7, Ra 0.8



BLHM series



ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Overhung load (kg)	Axial load (kg)
BLHM20	6	4	3
BLHM30	10	8	6
BLHM40	12	12	10
BLHM50	20	20	15
BLHM60	25	30	25
BLHM70	30	40	35

Data given based on input speed of 1000 rpm.
Values given as an indication only.

T and L right angle drive gearbox

BLH, BLHT, BL, BLHB

Technical information

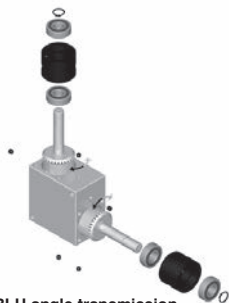
- **Speed ratio: from 1:1 to 4:1**
- **Materials :**
casing 6082 anodised aluminium
gears in heat treated steel (20NCD2)
- **Max. speed: 2000 to 4000 rpm** on
input depending on model
- **Backlash: $\approx 1^\circ$** on output
- **Lubrication: greased for life**
(Shell Alvania HDX2 grease)
- **Guarantee: 13 months**
- **Tolerances :**
 - PCD \varnothing : -0.15 mm
 - ground shafts h7, Ra 0.8



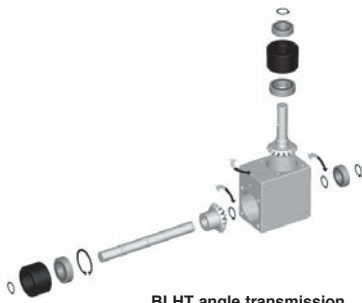
BLH range



BLHT range



BLH angle transmission

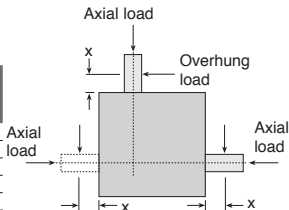


BLHT angle transmission

ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Overhung load (kg)	Axial load (kg)
BLH20 BLHT20	6	4	3
BLH30 BLHT30	10	8	6
BLH40 BLHT40	12	12	10
BLH50 BLHT50	20	20	15
BLH60 BLHT60	25	30	25
BLH70 BLHT70	30	40	35

Data given based on input speed of 1000 rpm.
values given as an indication only.

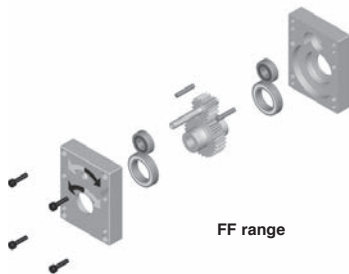


Offset spur gear gearboxes

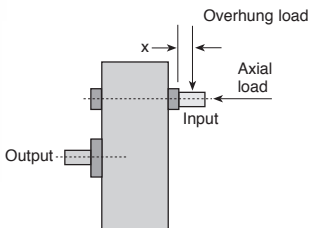
Technical information

FF

- **Speed ratio: from 2:1 to 7:1**
- **Materials :**
 - casing anodised aluminium
 - gears in 35NCD6 steel
- Max. speed: 2000 rpm on input
- Backlash: $\approx 1^\circ$ on output
- Lubrication: greased for life
(Shell Nerita HV grease)
- Guarantee: 13 months
- Tolerances :
 - Centres: $+0.00/+0.05$
 - PCD \varnothing : -0.15 mm
 - ground shafts h7, Ra 0.8



FF range



ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Output Overhung load (kg)	Axial load (kg)	Input Overhung load (kg)
FF10	8	10	10	6
FF15	10	20	20	12
FF20	15	40	30	16
FF30	20	60	40	20
FF40	30	80	50	30
FF50	40	100	60	40

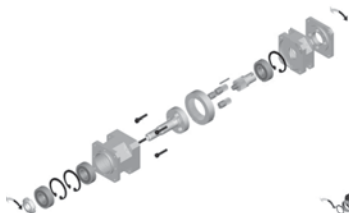
Data given based on input speed of 1000 rpm.
Values given as an indication only.

Inline spur gear gearboxes

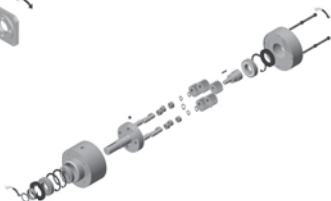
EHD

Technical information

- **Speed ratio: from 3:1 to 36:1**
- **Materials :**
casing 6082 anodised aluminium
gears in 20NCD2 heat treated steel
- **Max. speed: 2000 to 4000 rpm on input**
depending on model
- **Backlash: $\approx 0^{\circ}30$ on output**
- **Lubrication: greased for life**
(Shell Nerita HV grease)
- **Guarantee: 13 months**
- **Tolerances :**
• Ground shafts h7, Ra 0.8



EHD 04, 06, 08, 12 range



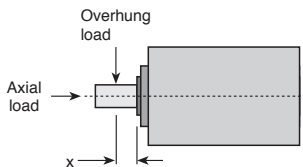
EHD16 range

ADMISSIBLE LOADS

Part number	Output		
	Distance 'X' (mm)	Overhung load (kg)	Axial load (kg)
EHD04*	10	20	15
EHD06*	10	25	15
EHD08*	12	30	20
EHD12**	20	60	60
EHD16**	30	100	100

*Ball bearings **Oblique contact bearings

Data given based on input speed of 1000 rpm.
values given as an indication only.



Spur gear coaxial gearbox

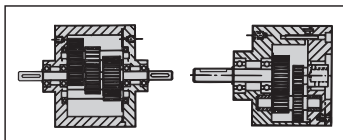
Technical information

J, XJ, NT, NH,
JHD, XJHD, K, XK, L, XL

- **Speed ratio: from 1:1 to 625:1**
- **Materials :**
Housing - anodised aluminium (6082) and black Delrin
Gears - 303 stainless steel, 35NCD 6 steel
Heat treated steel 20NCD2 depending on model
- **Max. speed:** 3000 to 4000 rpm on input depending on model
- **Lubrication:** greased for life (Shell Nerita HV grease)
- **Guarantee:** 13 months
- **Tolerances :**
• PCD \varnothing : -0.15 mm



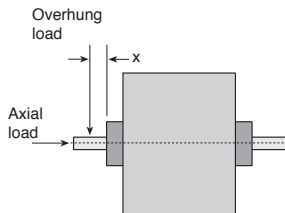
J, XJ range



ADMISSIBLE LOADS

Part number	Distance 'X' (mm)	Output	
		Overhung load (kg)	Axial load (kg)
J & XJ51-52-53	6	5	5
J & XJ64-65-66	6	5	5
K & XK64-65	8	10	8
K & XK83-84-85	8	10	8
L & XL84	10	12	10
L & XL101-102	10	12	10
L & XL115-116	10	12	10
NT & NH61-62-63	10	12	10
NT & NH91-92	15	20	15
NH & NH121-122	20	25	20

Data given based on input speed of 1000 rpm.
Values given as an indication only.



Note : Space constraints mean we are unable to include the full range of parallel train gear reducers in the catalogue. Examples of other models are:

• **Type K and XK : output torque up to 5Nm**

• **Type L and XL : output torque up to 40Nm**

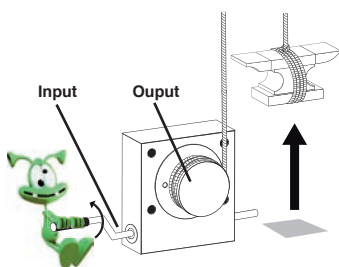
Please contact us for more details

What is anti-back drive ?

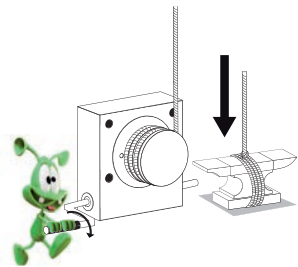
Technical information

The inputs of all of our gear reducers can turn in both directions whether they are reversible or not reversible. But what is anti back drive ?

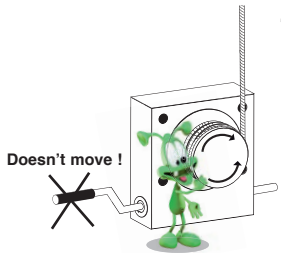
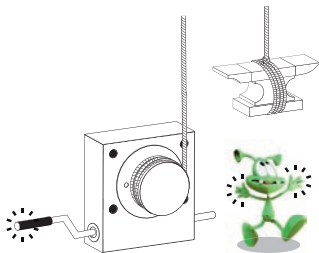
The input of an anti-back drive gear reducer can turn in both directions. In this example an anti-back drive gear reducer can be used to raise or lower a load by turning a handle.



...However, if the handle is released, the load will not move...



...If you try to turn the output of an anti-back drive gear reducer, the input shaft will not move.

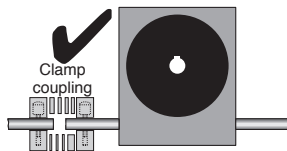
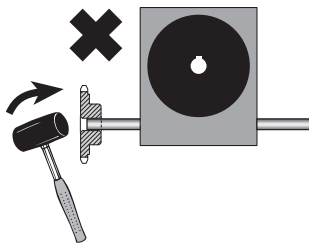


The Anti-back drive property is sometimes referred to as **self locking**

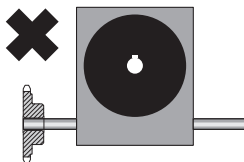
i Very occasionally, the reverse efficiency of an anti-back drive gear reducer is insufficient to guarantee anti back drive and a light brake will be required on the input shaft to ensure safety.

All types of gear gearboxes

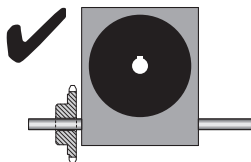
Assembly advice



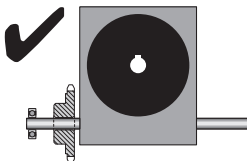
Clamp coupling avoids damage to shaft and absorbs misalignments.



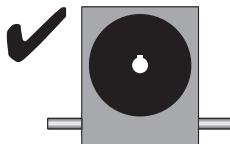
Gears mounted at the outer extremity of the input shaft can cause bending and eventual failure of the shaft.



Mounting a gear as near to the casing as possible allows the torque produced by the overhung load to be reduced, and protects the shaft from premature wear.



The addition of a bearing at the end of the shaft acts as a counter-weights to the overhung load thus avoiding damage to the shaft.



Please contact us about any modifications you may require to be made to a shaft. In that way they can be done before assembly, thus avoiding any possible damage to the gear reducer due to later re-machining.



Note: Gear reducers can be mounted in any position.
Any modifications made by the customer will void the guarantee.

Gearboxes

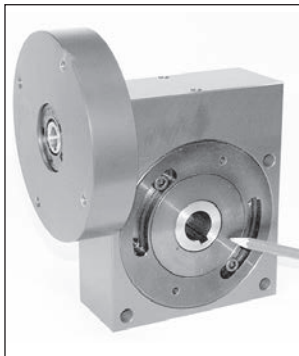
P-A

Anti-backlash adjustment



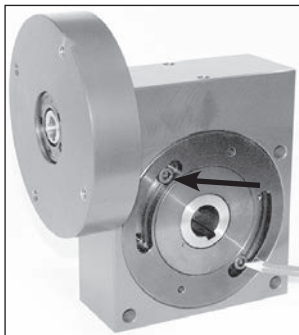
Important :

Adjusting the backlash yourself voids the guarantee, **please contact us.**



The wheel is covered by fixed plates on both sides, which should never move, and (smaller) eccentric cams.

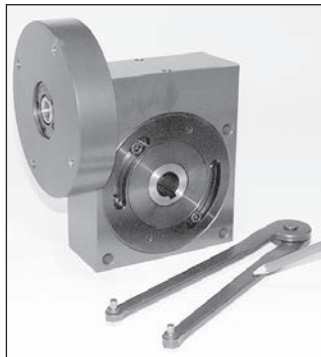
(The pointer indicates the high point of the cam).



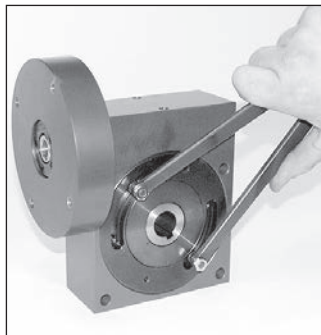
Unscrew the 2 CHC screws on both sides of the gearbox to allow the eccentric cams to rotate. To increase the backlash, move the wheel away from the screw. To reduce the backlash, move the wheel towards the screw. These adjustments should be made with small, gentle movements.

Retighten the CHC screws. Turn the wheel both ways to ensure that it doesn't stick. If it does, increase the backlash.

In the factory, the gearbox would then be taken to the test bench to measure the backlash obtained.



A pair of compasses will be required when adjusting the backlash



Do not unscrew any of the other screws to avoid damaging the gear reducer. The main plates should never be moved, irreparable damage could be caused.

Gearboxes

Technical information

Torque

- Torque figures have been calculated on the basis of a 12,000 hour working life and being 12 hours per day. For 24/24 use, multiply the original figure by 0.75.

Working temperature

- Normal working temperature range is 0°C to +70°C.
Alternative greases for use between -55°C and +155°C are available, as are bearings with sealed joints (2RS) for use up to +120°C, steel bearings without joints for use up to +150°C or stainless steel bearings for use up to +288°C when used with special high temperature grease.
- Standard grease allows use of up to +80°C in most applications. However if the speed or torque rises, the gear reducer temperature will also rise, which could cause damage.

Modifications

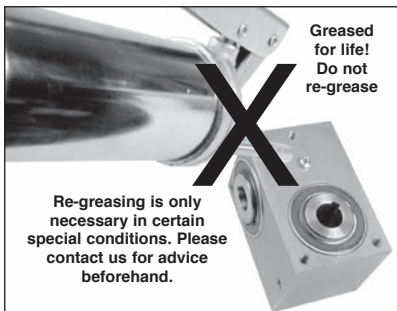
- We can modify gear reducer, adding keyways or circlip groove or modifying the shaft... Please contact us with your requirements. Any modifications that you carry out to a gear reducer modification will void the guarantee.

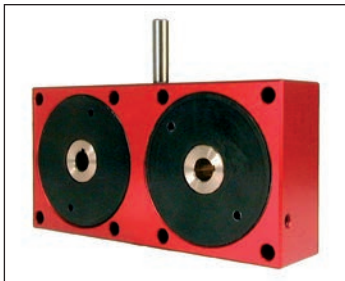
Usage

- The use of flexible coupling is recommended to connect the gearbox to the rest of the system.
- **Gear reducers are designed to reduce speed, not multiply it. Because of this, we cannot guarantee the correct operation of a gear reducer when used backwards.**
- The user must always test a gear reducer in his own application to ensure that it is suitable and produces the desired results.

Oiling

- Gear reducers are greased for life and do not require maintenance. If re-greasing, do not over-fill as this could cause gears to get stuck and over-heat the gear reducer.



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 on +33 (0) 437 490 055