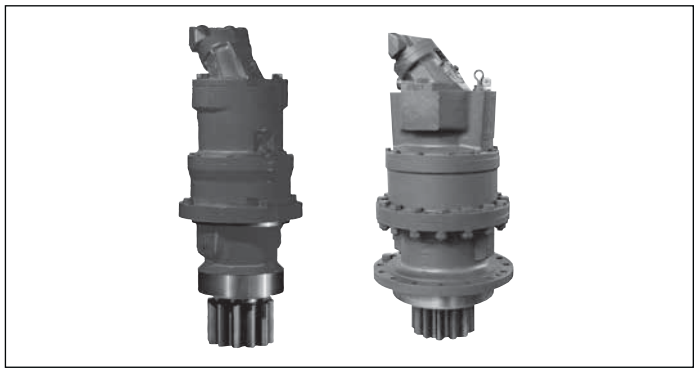
MOBILEX

Технические характеристики

The Drive & Control Company

Rexroth
Bosch Group

Swing Drives
MOBILEX GFB
for mobile applications



- Type GFB 9 to GFB 84
- Output torques between 4,000 and 68,300 Nm

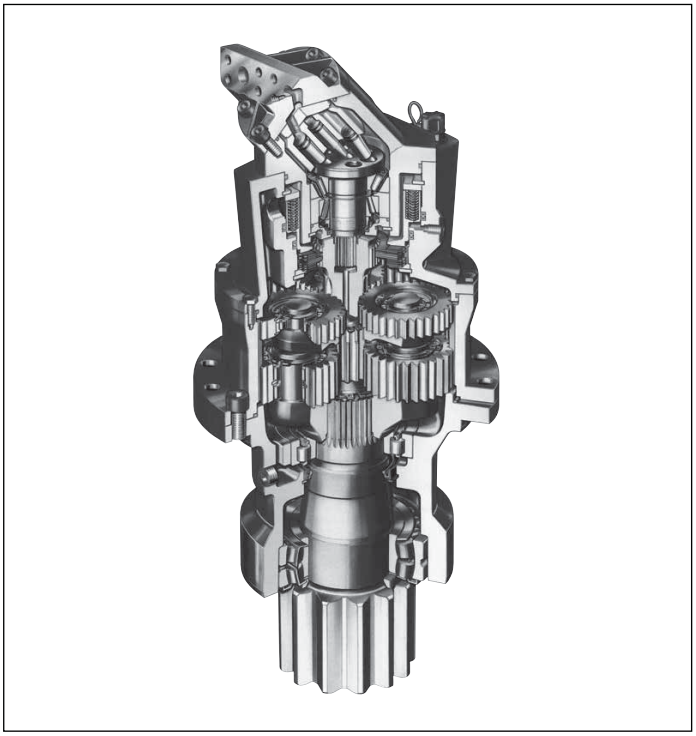
Characteristics

- Compact, space-saving two or three-stage planetary design
- Easy mounting
- Convenient oil change
- Integrated multiplate parking device
- Low-noise operation
- High efficiency
- Long service life

Contents

Description

Rexroth MOBILEX GFB planetary gearboxes are hydrostatic swing gears.
They are suitable for use in excavators and cranes of all types, in ship unloading equipment, forestry equipment and in all applications where accurate positioning is called for.
The drive consists of a two- or three-stage gearbox with an integrated multi-disk parking brake, an output pinion as well as a hydraulic motor, preferably from Rexroth.
The information provided in this bulletin serves to help you select the planetary gearbox best suited for your application. In addition, our field personnel are available to you to provide advisory services even at the project stage.



Rexroth MOBILEX GFB two-stage hydrostatic compact drive with a multiplate parking device and a Rexroth plug-in motor

Lubrication

The gearteeth and bearings are splash lubricated. Aside from periodic oil changes, the drive units are maintenance-free. Oil changes are easy to do. The oil brands recommended in the operating manual shall be exclusively used.
The change intervals for the relevant application conditions are also given in the operating manual. The pinion-side antifriction bearing of the output shaft is grease-lubricated for life.

Hydraulic Motors

The gearbox is designed for direct flange attachment of a variable or fixed displacement motor (preferably a Rexroth hydraulic motor).

Multiplate Parking Device

The standard supply scope includes a spring-loaded, hydraulically released multiplate parking device arranged on the input side.
The multiplate parking device is not a service brake.

Gearbox Supply

Rexroth MOBILEX planetary gearboxes are delivered ready for installation, but without oil filling. The standard gearbox version comes with a priming coat of gray color (similar to RAL 7032) and is internally protected with a temporary corrosion preventive that preserves the gearbox for 12 months, if stored in a dry location.
Exterenal flanges, shaft extensions and mating faces are protected with e.g. PERIGOL VCI 230 or CUSTOS 10-38

Mass, Oil Volumes, Dimensions

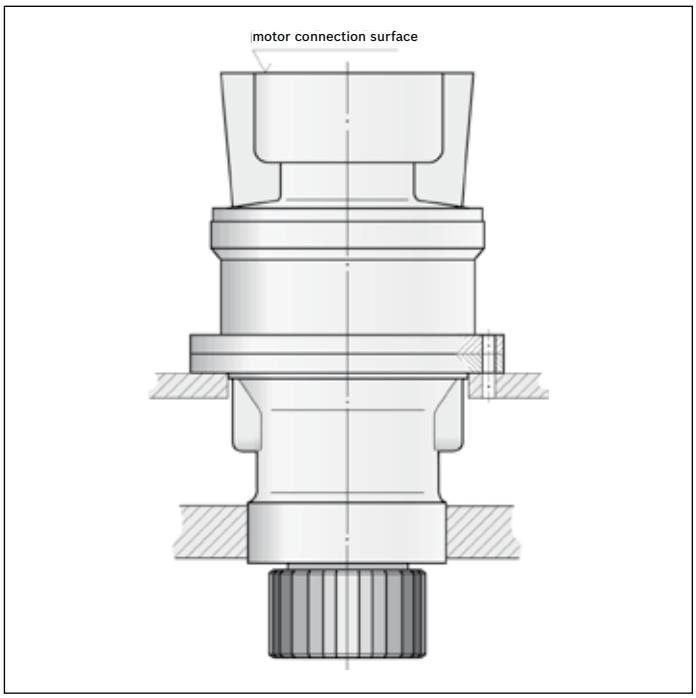
The specified mass are average figures.
As far as oil volumes are concerned, gearbox operators should rely on oil level readings rather than specified oil volumes. Figures and dimensions are not strictly binding. We reserve the right to make changes in line with technical progress.

Further Notes

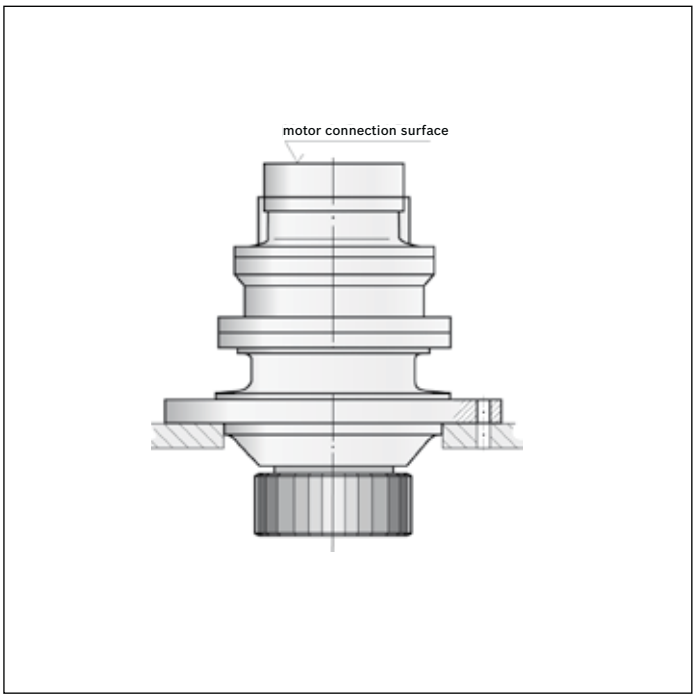
As prescribed by stationary provisions, all rotating parts must be protected by guards against accidental contact. Local safety regulations must be compiled with. Commissioning and maintenance of the gearboxes must be performed in line with the instructions given in our operating manual.

Please also note our gearbox series MOBILEX GFB 2000 (RE 77206).

Type of Construction



GFB T2/T3 1000
Version **1000** = 2 centering seats
T2 = 2-stage, **T3** = 3-stage



GFB T2/T3 2000
Version **2000** = 1 centering seat
T2 = 2-stage, **T3** = 3-stage

Ordering Code

MOBILEX GFB 26 T2 1000

Swing Drive GFB

Version
(Version = Output Torque T_2 [kNm]

Number of Centering Seats

Number of Gear Stages

Swing Drives MOBILEX GFB - Overview

Type/Version GFB	Output Torque Excavator $T_{2\,max}$ Nm	Output Torque Crane $T_{2\,max}$ Nm	Gear Ratio from/to i
GFB 9 T2	4,000	7,000	33.4
GFB 17 T2	7,700	12,700	32.5 - 45.7
GFB 24 T2	10,600	17,500	149.1
GFB 26 T3	10,000	16,500	43.9 - 51.5
GFB 36 T3	17,500	28,500	117.6 - 153.6
GFB 50 T2	22,000	38,000	32.3
GFB 50 T2	22,000	38,000	147.4
GFB 80 T3	38,200	68,300	186.4
GFB 84 T2	38,200	68,300	35.1

Application Conditions

The gearboxes are designed for use at ambient temperatures of between -20°C and +40°C. Environmental influences such as salt water, salty air, sand, dust, compressure, heavy vibrations, extreme shocks and ambient temperatures, aggressive fluids and the like may affect the function so that the gearbox can be designed for safe operation.

Gearbox Design

The gearbox design is based on many years of practical application experience. The maximum output torques $T_{2\,max}$ indicated under technical data for crane applications relate to FEM Section I, 3rd Edition and Section IX (FEM - Fédération Européene de la Manutention), as well as DIN 15020, collective load class L2, service and time category T5 corresponding to driver group M5. The reference output speed is 25 revolutions per minute maximum. If the swing drive is to be classified in another driver group, the required output torque must be converted using the K factor (see table). This conversion gives you the maximum admissible output torque for the new driver group selected. Wether or not the chosen overall classification can be met will be determined by the Rexroth gear technology experts

.

Higher Torques

For gearboxes transmitting higher torques than those indicated in this product catalog, please contact us.

Gearbox Selection

- T_2 = Output torque
- T_{2K} = Corrected output torque
  K factor according to device time category and collective group given in the table.
  $$T_{2K} = T_2 \bullet K$$
- T_{2K} of the gearbox to be selected must be ≤ $T_{2\,max}$ (according to this product catalog).

Multiplate Parking Device

$$T_{Br\,sta.\,min} = 1{,}3 \bullet T_2 \text{ (input torque)}$$

The holding torque multiplies with the selected transmission ratio.

See also Gearbox Design.

The customer specification for swing drives is reproduced on pages 10 to 12.

Driver Groups and Service Time Categories FEM, Section I, 3rd Edition 1987 (FEM: Fédération Européene de la Manutention)

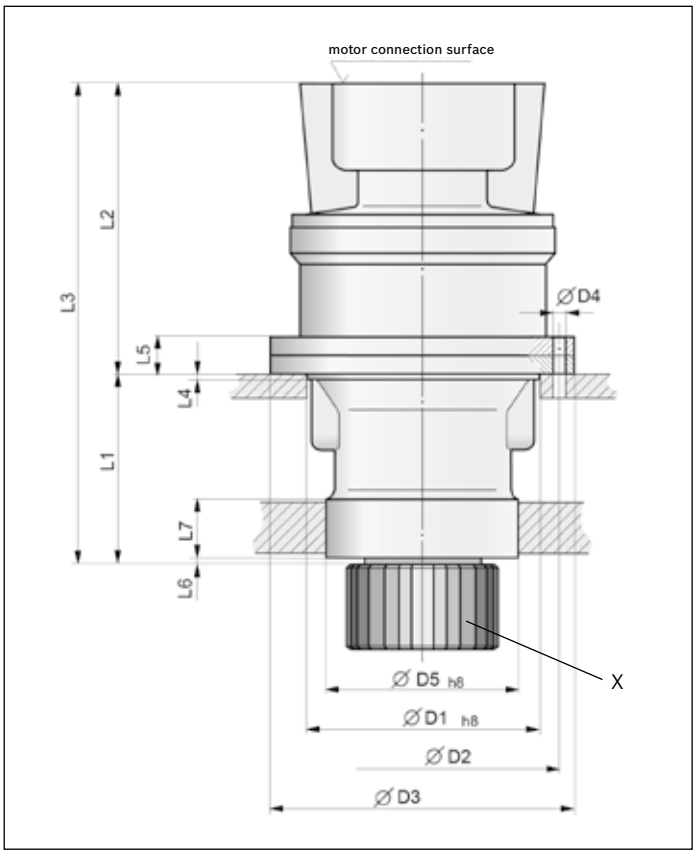
Service time category				T2	T3	T4	T5	T6	T7	T8
Assumed average service time per day in hours				0.25 - 0.5	0.5 - 1	1 - 2	2 - 4	4 - 8	8 - 16	> 16
Theoretic ervice life in hours				400 - 800	800 - 1800	1600 - 3200	3200 - 6300	6300 - 12500	12500 - 25000	25000 - 50000
Collective load class				**Driver group with K factor**						
Collective groups	L1	low	Maximum loads occur only in exceptional cases; low loads are present at all times	M 1 0.90	M 2 0.90	M 3 0.90	M 4 0.90	M 5 0.95	M 6 1.05	M 7 1.2
	L2	medium	Low, medium and high loads are present for roughly equal periods of time	M 2 0.90	M 3 0.95	M 4 0.95	M 5 1	M 6 1.15	M 7 1.30	M 8 1.50
	L3	high	Loads are always near the maximum	M 3 1.05	M 4 1.05	M 5 1.10	M 6 1.25	M 7 1.40	M 8 1.60	M 8 1.80
	L4	very high	Always maximum loads	M 4 1.25	M 5 1.30	M 6 1.45	M 7 1.65	M 8 1.85	M 8 2.10	M 8 2.40

Classifications Examples (see FEM Section I, 3. Edition, Table T.2.1.3.5.)

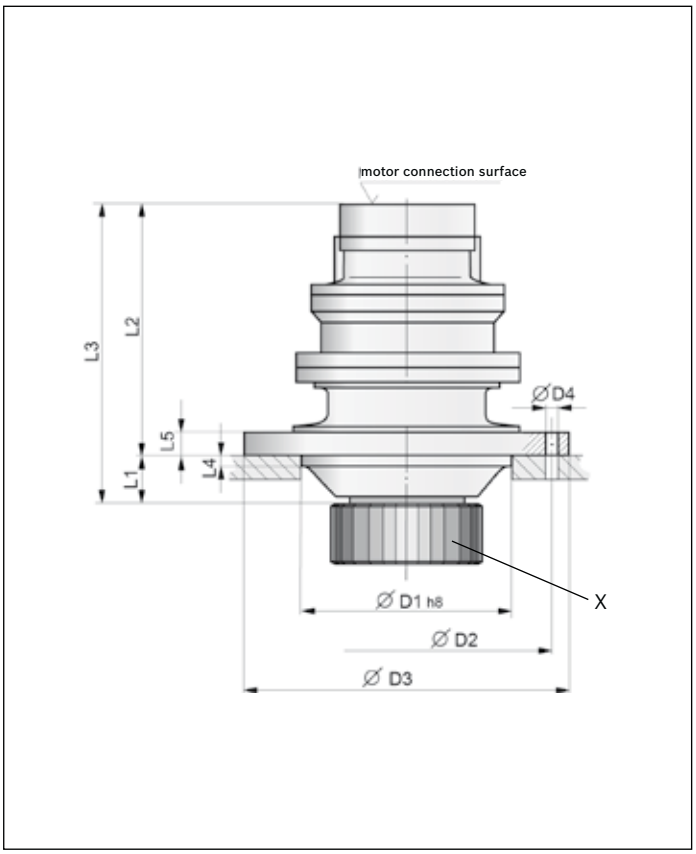
Type of Crane (Designation)	**Details on type of use** [1)]	Type of Driver				
		Hoisting	Swinging	Level Luffing	Trolley Travelling	Crane Travelling
Erection cranes		M 2 - M 3	M 2 - M 3	M 1 - M 2	M 1 - M 2	M 2 - M 3
Loading bridges	hook	M 5 - M 6	M 4	-	M 4 - M 5	M 5 - M 6
Loading bridges	grab or magnet	M 7 - M 8	M 6	-	M 6 - M 7	M 7 - M 8
Workshop cranes		M 6	M 4	-	M 4	M 5
Overhead travelling cranes, ram cranes, scrap yard cranes	grab or magnet	M 8	M 6	-	M 6 - M 7	M 7 - M 8
Unloading bridges, container gantry cranes	hook or spreader	M 6 - M 7	M 5 - M 6	M 3 - M 4	M 6 - M 7	M 4 - M 5
Other gantry cranes (with trolley and/or live ring)	hook	M 4 - M 5	M 4 - M 5	-	M 4 - M 5	M 4 - M 5
Unloading bridges, container gantry cranes (with trolley and/or live ring)	grab or magnet	M 8	M 5 - M 6	M 3 - M 4	M 7 - M 8	M 4 - M 5
Berth cranes, shipyard cranes, dismantling cranes	hook	M 5 - M 6	M 4 - M 5	M 4 - M 5	M 4 - M 5	M 5 - M 6
Dockside cranes (slewable, gantry type, ...) floating cranes, floating shearlegs	hook	M 6 - M 7	M 5 - M 6	M 5 - M 6	-	M 3 - M 4
Dockside cranes (slewable, gantry type, ...) floating cranes, floating shearlegs	grab or magnet	M 7 - M 8	M 6 - M 7	M 6 - M 7	-	M 4 - M 5
Floating cranes and floating shearlegs for very high loads (normally above 100 tons)		M 3 - M 4	M 3 - M 4	M 3 - M 4	-	-
Shipboard cranes	hook	M 4	M 3 - M 4	M 3 - M 4	M 2	M 3
Shipboard cranes	grab or magnet	M 5 - M 6	M 3 - M 4	M 3 - M 4	M 4 - M 5	M 3 - M 4
Tower cranes for construction sites		M 4	M 5	M 4	M 3	M 3
Derrick tower gantries		M 2 - M 3	M 1 - M 2	M 1 - M 2	-	-
Railroad cranes, approved for service on trains		M 3 - M 4	M 2 - M 3	M 2 - M 3	-	-
Vehicle-mounted cranes	hook	M 3 - M 4	M 2 - M 3	M 2 - M 3	-	-

1) In this rubric only a few typical types of use are indicated

Dimensions



GFB T2/T3 1000 • X = The gearing of the output pinion (modul, number of teeth, tooth width, etc.) is governed by the customer‘s ring gear.



GFB T2/T3 2000 • X = The gearing of the output pinion (modul, number of teeth, tooth width, etc.) is governed by the customer‘s ring gear.

Technical Data

Type/Version GFB	Output Torque Excavator $T_{2\,max}$ Nm	Output Torque Crane $T_{2\,max}$ Nm	Gear Ratio i	Holding Torque $T_{Br\,max}$ Nm	Hydraulic Motor
GFB 9 T2 2000/2	4,000	7,000	33.4	245	A6VM 55 / A2FM 56
GFB 17 T2 1000	7,700	12,700	32.5 • 45.7	390	A2FE 45 • 56
GFB 17 T2 2000	7,700	12,700	45.7	390	A2FE 45 • 56
GFB 24 T2 1000/1	10,600	17,500	149.1	249	A2FM 32
GFB 26 T2 1000	10,000	16,500	43.9 • 51.5	613	A2FE 80
GFB 26 T2 2000	10,000	16,500	43.9 • 51.5	613	A2FE 80
GFB 36 T3 1000/1	17,500	28,500	117.6 • 153.6	332	A2FM 45
GFB 36 T3 1000/2	17,500	28,500	117.6 • 153.6	332	A2FE 45 • 63

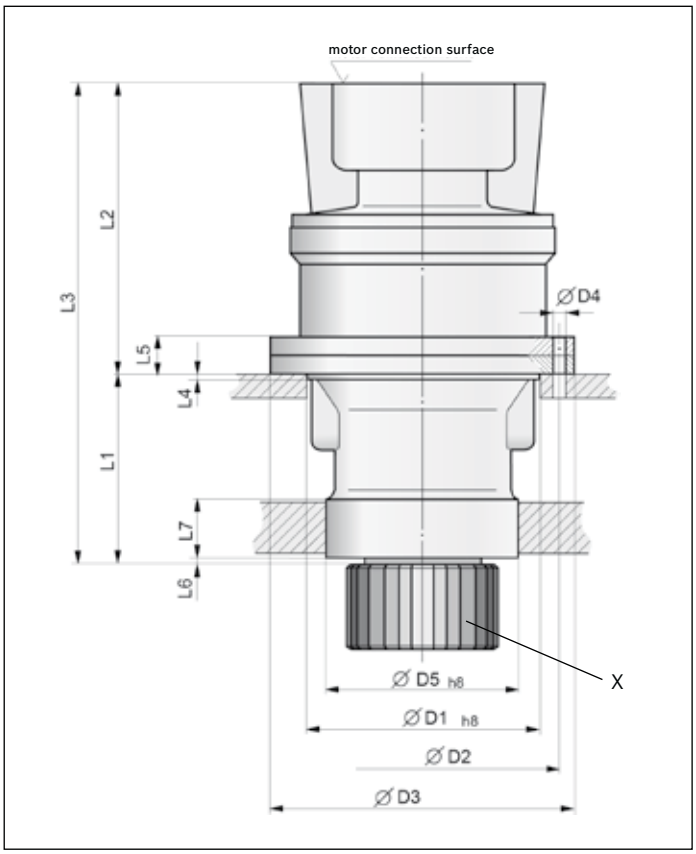
GFB 9 T2 2000/**2** = Identification number for different overall lengths, diameters resp. motor attachment variants

Dimensions, Bearing Load Capacities and Mass

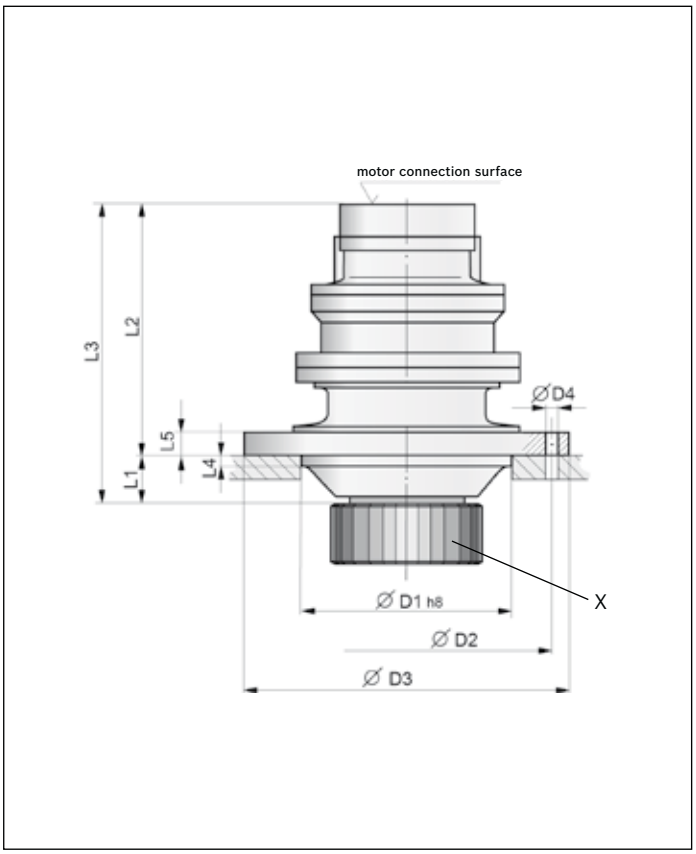
Type/Version GFB	D1	D2	D3	D4	D5	Mass
			mm			kg
GFB 9 T2 2000/2	175	260	288	12x 17.5	-	85
GFB 17 T2 1000	256	290	320	16x 17.5	225	130
GFB 17 T2 2000	250	305	340	16x 17.5	-	130
GFB 24 T2 1000/1	265	315	355	20x 17.5	230	165
GFB 26 T2 1000	280	350	380	20x 17.5	250	225
GFB 26 T2 2000	275	335	365	20x 17.5	-	240
GFB 36 T3 1000/1	280	350	380	20x 17.5	250	210
GFB 36 T3 1000/2	280	350	380	18x 17.5	280	175

Type/Version GFB	L1	L2	L3	L4	L5	L6	L7
GFB 9 T2 2000/2	40	325.5	365.5	26	22	-	-
GFB 17 T2 1000	200	300	500	6	38	6	55
GFB 17 T2 2000	57	443	500	46	23	-	-
GFB 24 T2 1000/1	245	387	632	15	34	8	75
GFB 26 T2 1000	250	321	571	12	33	10	85
GFB 26 T2 2000	55	511	566	20	223	-	-
GFB 36 T3 1000/1	245	423	668	12	33	5	85
GFB 36 T3 1000/2	245	332	577	12	33	5	85

Abmessungen



GFB T2/T3 1000 • X = The gearing of the output pinion (modul, number of teeth, tooth width, etc.) is governed by the customer‘s ring gear.



GFB T2/T3 2000 • X = The gearing of the output pinion (modul, number of teeth, tooth width etc.) is governed by the customer‘s ring gear.

Technical Data

Type/Version GFB	Output Torque Excavator $T_{2\,max}$ Nm	Output Torque Crane $T_{2\,max}$ Nm	Gear Ratio i	Holding Torque $T_{Br\,max}$ Nm	Hydraulic Motor
GFB 50 T2 9000	22,000	38,000	32.3	473	A2FE 63
GFB 50 T2 9000/1	22,000	38,000	32.3	473	A2FM 80
GFB 50 T2 9000/2	22,000	38,000	32.3	473	A2FM 80
GFB 50 T3 1000/3	22,000	38,000	147.4	473	A2FM 63
GFB 50 T3 1000/4	22,000	38,000	147.4	473	A2FM 63
GFB 80 T3 1000/3	38,200	68,300	186.4	975	A2FM 80 • 90
GFB 84 T2 2000/1	38,200	68,300	35.1	1,661	A2FM 180 • 200
GFB 84 T2 2000/2	38,200	68,300	35.1	1,661	AA2FM 180

GFB 50 T3 1000/**3** = identification number for different overall lengths, diameters resp. motor attachment variants

Dimensions, Bearing Load Capacities and Mass

Type/Version GFB	D1	D2	D3	D4	D5	Mass
			mm			kg
GFB 50 T2 9000	300	375	410	20x 17.5	280	240
GFB 50 T2 9000/1	300	375	410	20x 17.5	280	240
GFB 50 T2 9000/2	300	375	410	20x 17.5	280	240
GFB 50 T3 1000/3	330	375	411	24x 17.5	300	310
GFB 50 T3 1000/4	330	375	411	24x 17.5	300	315
GFB 80 T3 1000/3	440	480	530	24x 26	370	540
GFB 84 T2 2000/1	400	470	510	24x 26	-	515
GFB 84 T2 2000/2	400	460	510	24x 26	-	515

Type/Version GFB	L1	L2	L3	L4	L5	L6	L7
GFB 50 T2 9000	245	287.5	532.5	12	33	5	-
GFB 50 T2 9000/1	245	292.5	537.5	12	33	5	-
GFB 50 T2 9000/2	245	299.5	544.5	12	33	5	-
GFB 50 T3 1000/3	290	429.5	719.5	15	38	40	75
GFB 50 T3 1000/4	290	396.5	686.5	15	38	40	75
GFB 80 T3 1000/3	314	554.5	868.5	14	40	41	121
GFB 84 T2 2000/1	64	721	785	10	465	-	-
GFB 84 T2 2000/2	64	710	774	10	465	-	-

You wish to receive an offer for the swing drives MOBILEX GFB?

Company: _____
Name/Dept.: _____
Place: _____
Phone: _____
E-mail: _____
Date: _____

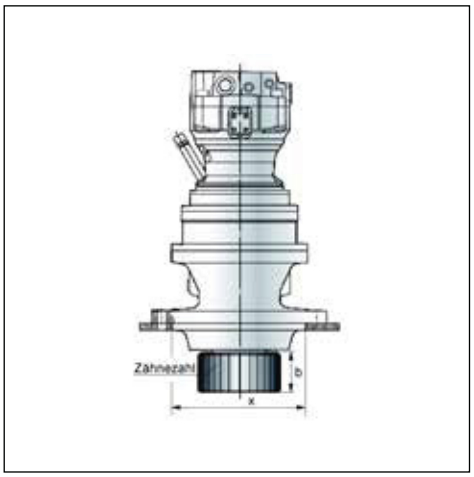
Please enclose existing drawings, diagrams, comments and the like.

Page 1/3

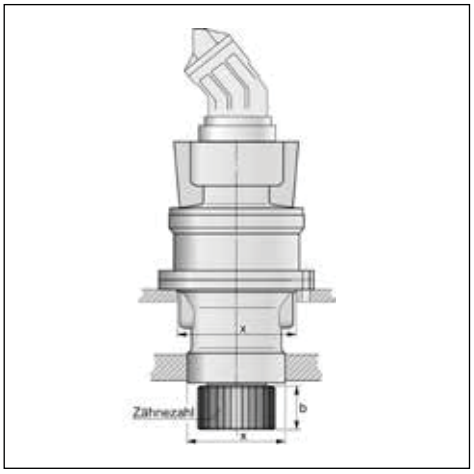
Operating data / Design

It is mandatory to fill out all fields!
For exceptions see footnotes.

☐ One centering seat (x) with motor



☐ Two centering seats (x) with



Type of machine _____
Rating acc. to FEM Section I — T _____ L _____ M _____
or
Alternativ load spectrum _____
Ambient temperature from/to _____ °C
Operating machine weight [1] _____ t
Hydraulic lifting power, max. [1] _____ t
Superstructure speed n_O _____ rpm
Superstructure torque T_O _____ kNm
Duty cycles per minute [1] _____

Gearbox GFB _____
Output torque, max. $T_{2\,max}$ _____ kNm
Output speed, max. $n_{2\,max}$ _____ rpm
Ratio [1] i _____

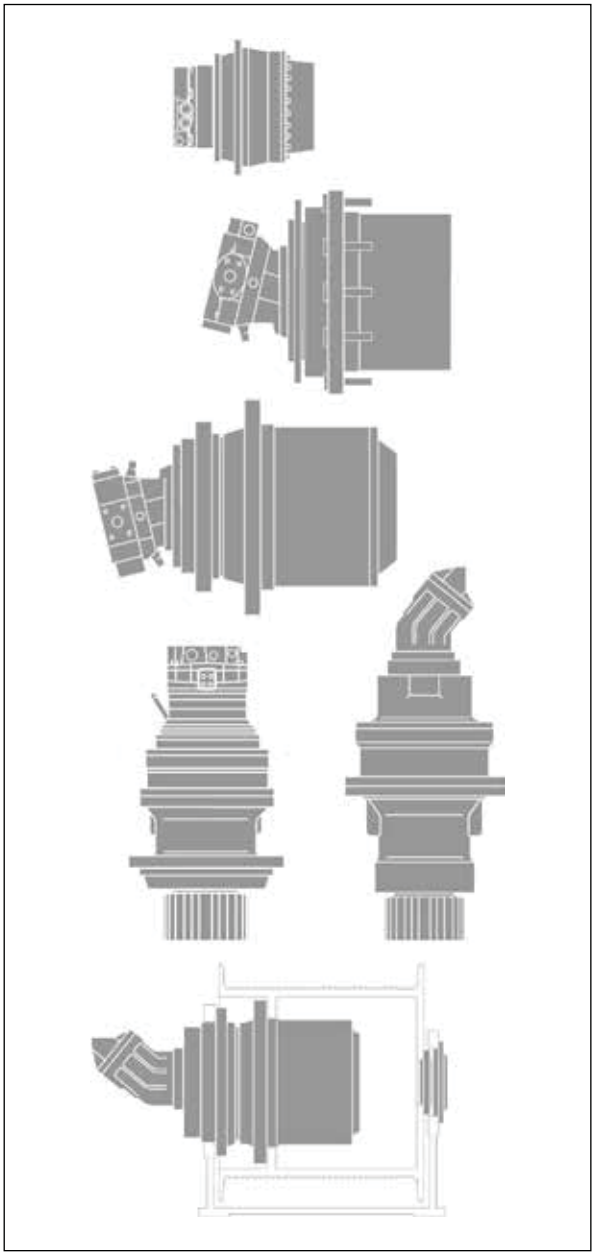
Output pinion
No. of teeth z _____
Module m _____ mm
Tooth width b _____ mm
Pressure angle ∝ _____ Grad
Profile shift coefficient x _____
Pinion mounting position ☐ Bottom ☐ Top ☐ Horizontal
Gearbox with eccentricity [1] ☐ no ☐ yes: _____ mm

Slewing ring
Slewing ring manufacturer [1] _____
Type [1] _____
Design of slewing ring ☐ Internal gearing ☐ External gearing
No. of teeth slewing ring z _____
Tooth width of slewing ring b _____ mm
Center distance pinion-gear ring [1] _____ mm

Brake
Multiple-disk parking brake ☐ no ☐ yes ☐ wet ☐ dry
Min. parking torque of multiple-disk parking brake _____ Nm
With mechanical unlocking device ☐ yes ☐ no
Release pressure, max P_{max} _____ bar
Release pressure, min [1] P_{min} _____ bar
Top coat specific ☐ no ☐ yes
Color RAL _____

[1] Optional entry

Planetary gearboxes for mobile units



Hydrostatic travel drives

- HYDROTRAC GFT
  For fixed- or variable-displacement motors
  Output torques between 9,5 and 580 kNm
  Data sheet RE 77110
- HYDROTRAC GFT 2000
  Series 30
  Output torques between 13,5 and 42,5 kNm
  Data sheet RE 77116
- HYDROTRAC GFT 8000
  Series 30
  Output torques between 20 and 30 kNm
  Data sheet RE 77128
- HYDROTRAC GFT 8000
  Series 40
  Output torques between 10 and 130 kNm
  Data sheet RE 77117
- HYDROTRAC GFT 45 T2/T3
  Output torques max. 45 kNm
  Data sheet RE 77115

Hydrostatic swing drives

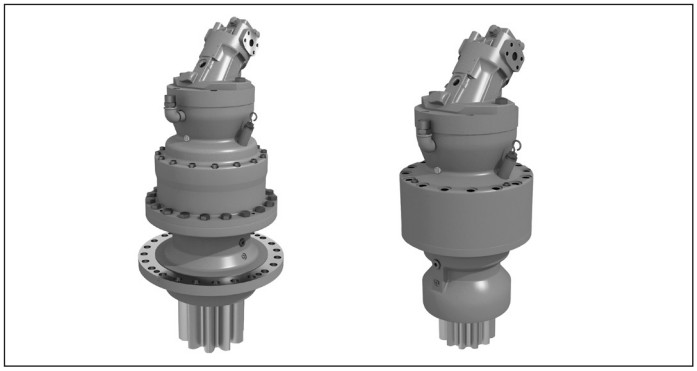
- MOBILEX GFB
  For fixed- or variable-displacement motors
  Output torques between 4 and 68,3 kNm
  Data sheet RE 77201
- MOBILEX GFB 2000
  Series 20
  Output torques between 4 and 14,5 kNm
  Data sheet RE 77206

Hydrostatic winch gears

- MOBILEX GFT-W
  For fixed- or variable-displacement motors
  Output torques between 14 and 325 kNm
  Data sheet RE 77502

rexroth
A Bosch Company

Hydrostatic swing drives for mobile applications
MOBILEX GFB 8000
Series 40



- Sizes 8110 to 8195
- Output torques from 4500 to 54000 Nm

Features

- Compact, space-saving two- or three-stage planetary gearbox
- Robust design
- Integrated static multiple-disk parking brake
- Assembly of variable plug-in and fixed plug-in motors of different series possible
- Assembly of electric motors possible
- Assembly of swash plate slew drive motor with integrated multiple-disk parking brake possible
- Easy assembly
- High efficiency
- Circulating oil lubrication/oil cooling (optional)
- Eccentric (optional)

Contents

Description

The hydrostatic swing drive series 40 consists of a two- or three-stage planetary gearbox, integrated multiple-disk parking brake as well as an ouput shaft, whose gears can be customized to the slewing ring. In combination with a hydraulic axial piston motor, hydraulic swash plate slew drive motor or electric motor the complete unit can be used for excavators and cranes of all types, unloading equipment, forestry equipment and in all applications where accurate positioning is necessary.

Application conditions

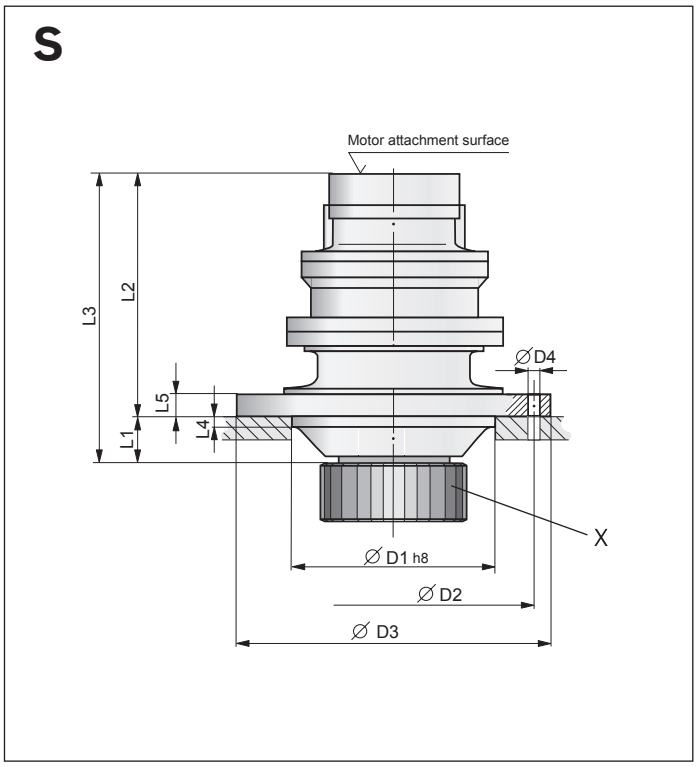
The planetary gearboxes are designed for use in environmental temperatures between -25°C and +40°C. Environmental factors such as salt water, salt air, sand, dust, extreme environmental temperatures, etc. affect the function. Such influences must be pre-announced in order for a secure gearbox design.

Technical data

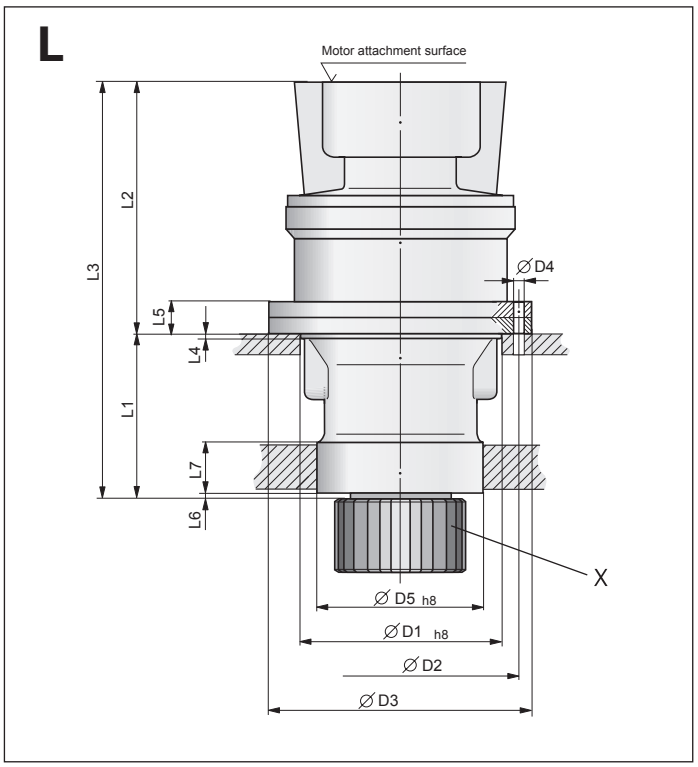
Size GFB	**Output torque** Crane [1]	Excavator [2]	**Ratio** [3]	**Appr. weight without motor variant Short S**	**Appr. weight without motor variant Long L**	**Static holding torque brake**	**Compatible hydraulic motors** [3]
	$T_{2\ max}$ Nm	$T_{2\ max}$ Nm	i	kg	kg	$T_{Br\ max}$ Nm	
8110 E	7200	4500	**26.2** • 33.3	-	92	280	A2FE 28 • **45**
8130 E	12700	8500	**19.3** • **27.0** • **33.3** • 48.1	200 [4] 150	160 [5] 133	982 747 505 340	A2FE 28 • 32 • 45 • 56 • 63 • 80 • 90 • **107** • **125** A6VE 55 • 60 • 80 • 85 A2FM **28** A6VM **55** • **60** • **80** • **85** • **107** **115**
8144 E	18000	12000	**32.3**	-	202	410	[6]
8146 F	28500	17500	**69.0** • **81.6** • 102.6 • 119.3 • 134.8 • **156.0**	243	208	421 625	A2FE 28 • 32 • 45 • 56 • 63 • 80 • 90 • **107** • **125** A6VE 55 • 60 • 80 • 85 A2FM 56 • **63**
8150 E	30000	19000	27.0 • 36.4 • 42.4 • **51.6**	[6]	235	1220	A2FE 80 • 90 • 107 • **125** 160 • 180 A31FD 150 • 170
8195 E		54000	**49.7**	915	-	1580	A2FM 180 • 200

1) Design according to FEM L2, T5, M5 (FEM 1.001/3rd edition) at output speed 25 rpm
2) and applications with high duty cycle and dynamic
3) **Bold printed** = preferred program
4) Weight is valid for i=19,3 und i=27,0
5) Weight is valid for i=27,0
6) On request

Design



S = Variant Short, output flange with one centering seat



L = Variant Long, output flange with two centering seats

Dimensions

Size GFB	Variant	D1	D2	D3	D4	D5 mm	L1	L2	L3	L4	L5	L6	L7
8110 E	L	179	250	280	12x ø18	175	126	313	439	10	144	3	33.5
8130 E	L	256	290	320	16x ø17.5	225/200	200	303.5	503.5	14	147.5	6	65/60
8130 E	S	250	305	340	16x ø17.5 24x ø17.5	-	57	436.5 446.5 485 [1]	493.5 503.5 542 [1]	51	20	-	-
8144 E	L	296	350	380	12x ø18	230	220	[2]	[2]	14	171	7	62.5
8146 F	L	280	350	380	20x ø17.5	250	245	367	612	12	34.5	5	90
8146 F	S	280	395	430	24x ø22	-	80	532 581	612 661	75	30	-	-
8150 E	L	300	375	410	20x ø17.5	250	245	340	645	20	47.5	-	92
8150 E	S	280	375	410	20x ø17.5		54	576	630	44	33	-	-
8150 E [3]	S	380	484	528	14x ø25	-	70	338 575 [4]	408 645 [4]	23	28	-	-
8195 E	S	460	520	562	24x ø26	-	85	857	942	40	536	-	-

X = The gears of the output shaft (modul, number of gear teeth, width of gear tooth, etc.) is governed by the customer´s ring gear.

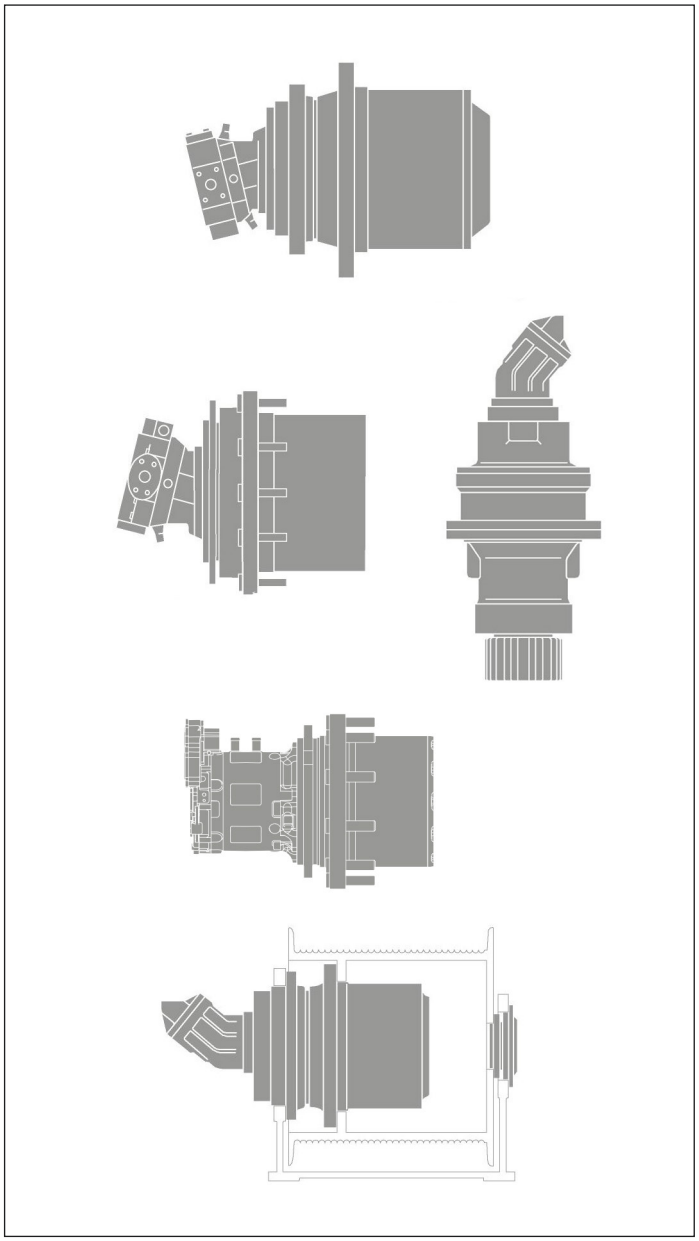
1) Length is valid for i=19,3

2) Sizes depending on motor nominal size

3) Dimensions variant S in combination with A31FD150/170

4) In combination with A2FE 107/125

Overview data sheets Gearbox Technology



Hydrostatic travel drives

- HYDROTRAC GFT, series 20, RE 77110
  Output torques from 160 to 620 kNm
- HYDROTRAC GFT 2160, series 20, RE 77125
  Output torque max. 42,5 kNm
- HYDROTRAC GFT 8000, series 20, RE 79099
  Output torques from 7 to 15 kNm
- HYDROTRAC GFT 8000, series 30, RE 77128
  Output torques from 20 to 30 kNm
- HYDROTRAC GFT 8000, series 40, RE 77117
  Output torques from 7 to 130 kNm
- HYDROTRAC GFT 8150 with TIS, RE 79093
  Output torque max. 42 kNm
- HYDROTRAC GFT 45 T2/T3, RE 77115
  Output torque max. 45 kNm
- HYDROTRAC GFT 34, series 20, RE 79062
  Output torque max. 34 kNm

Electromechanical travel drives

- ROTATRAC eGFT 8000, series 40, RE 79082
  Output torques from 15 to 42 kNm

Hydrostatic swing drives

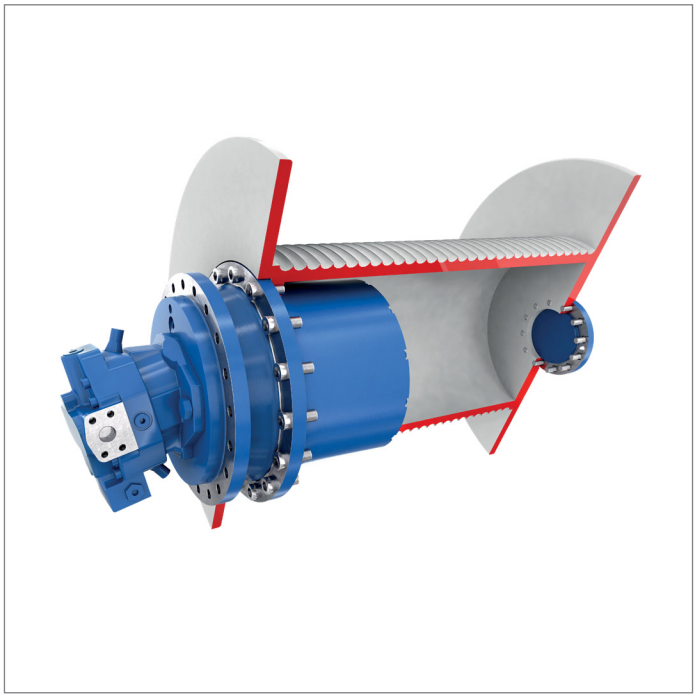
- MOBILEX GFB, RE 77201
  Output torques from 4 to 68,3 kNm
- MOBILEX GFB 2160, series 20, RE 77208
  Output torque max. 14,5 kNm
- MOBILEX GFB 8000, series 40, RE 79058
  Output torques from 4,5 to 54 kNm

Hydrostatic winch gears

- MOBILEX GFT-W, RE 77502
  Output torques from 140 to 325 kNm
- MOBILEX GFW 5000, series 40, RE 77506
  Output torques from 7,5 to 105 kNm

rexroth
A Bosch Company

Winch drives
for mobile and stationary applications
MOBILEX GFW 5000 Series 40



- Sizes 5110 to 5190
- Output torques from 7500 to 105000 Nm
- Rope pull forces from 45 kN to 323 kN

Merkmale

- Compact, space-saving two- or three-stage planetary gearbox
- Robust design
- Integrated static multiple-disk parking brake
- Assembly of variable plug-in and fixed plug-in motors of different series possible
- Easy assembly
- Easy oil change

Inhalt

Description

The hydrostatic winch drive series 40 consists of a two- or three-stage planetary gearbox, which build, in combination with a hydraulic axial piston motor, a space-saving drive unit. The complete unit can be used for drilling units, mobile and crawler cranes as well as railroad, shipboard, dockside and container cranes.

Application conditions

The winch drives are designed for use in environmental temperatures between -25°C and +40°C. Environmental factors such as salt water, salt air, sand, dust, extreme environmental temperatures, etc. affect the function. Such influences must be pre-announced in order for a secure gearbox design.

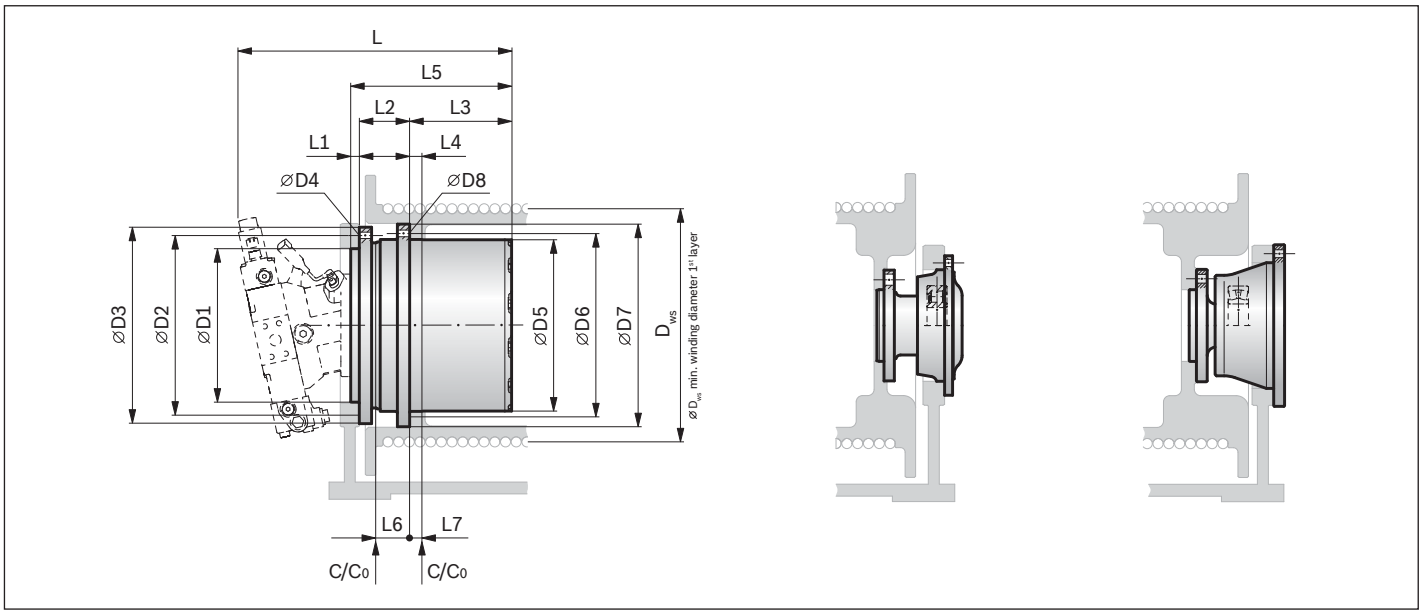
Technical data

Size GFW	Output torque [1] $T_{2\,max}$	Rope pull force max. [2]	Ratio	Static holding torque brake [3] $T_{Br\,max}$	Compatible hydraulic motors	Appr. weight without motor [4]
	Nm	kN	i	Nm		kg
5110 E	7500	45	25.2 • 39.2 47.1 • 54.7	350	A2FEN 28 • 32 • 37 • 45 / A2FEM 28 • 32 A6VE 28 / A10VM 45	53
5130 E	14000	73	26.0 • 32.3 • 39.2 • 50.6	689	A2FEN 56 • 63 • 80 • 90 • 107 A2FEM 45 • 56 • 63 • 80 • 90 A2FEH 45 • 56 • 63 • 80 • 90 / A6VE 55 • 60	87
5146 E	22000	95	27.6	725	A2FEN 56 • 63 • 80 • 90 • 107 / A2FEM 45 • 56 • 80 • 90 A2FEH 45 • 56 • 63 • 80 • 90 / A6VE 55 • 60 • 80 • 85 A6VM 107 • 115	136
5146 F	26000	118	68.0 • 80.6 101.6 • 118.3	668 480	A2FEN 56 • 63 • 80 • 90 • 107 / A2FEM 45 • 56 • 80 • 90 A2FEH 45 • 56 • 63 • 80 • 90 / A2FMM 107 [6] • 125 [6] A2FMH 107 [6] • 125 [6] / A6VE 55 • 60 • 80 • 85	140
5150 E [5]	30000	120	32.3 • 35.4 41.4 • 50.6 54.7	1448 989 755	A2FEN 90 • 107 / A2FEM 80 • 90 • 107 • 125 A2FEH 80 • 90 • 107 • 125 / A2FM 160 • 180 A6VE 80 • 85 • 107 • 115 • 160 • 170 / A6VM 160 • 170	200
5170 F [5]	45000	165	63.9 • 83.1 • 95.0 107.3 • 124.1 • 162.5	1221 995 755	A2FE 160 • 180 / A2FEN 90 • 107 A2FEM 80 • 90 • 107 • 125 / A2FEH 80 • 90 • 107 • 125 A2FMM 107 [6] • 125 [6] / A2FMH 107 [6] • 125 [6] A6VE 80 • 85 • 107 • 115 • 160 • 170 A6VM 107 • 140 • 150 • 160 • 170	265
5185 F [5]	70000	233	76.4 • 98.7 • 110.0 126.6 • 147.0 • 185.1	1448 989	A2FE 160 • 180 / A2FEN 90 • 107 A2FEM 80 • 90 • 107 • 125 / A2FEH 80 • 90 • 107 • 125 A6VE 107 • 115 • 160 • 170 / A6VM 160 • 200 • 215 • 250	358
5190 F [5]	105000	323	75.0 • 93.8 116.0 121.1 • 140.1 167.9 • 209.0	2080 1872 1448 989	A2FE 160 • 180 / A2FEM 107 • 125 / A2FEH 107 • 125 A6VE 107 • 115 • 160 • 170 / A2FM 200 • 250 A6VM 200 • 215 • 250	430

A6VM / A2FM motors in others sizes on request.

1) Design according to FEM L2, T5, M5 (FEM 1.001/3rd edition) at output speed 15 rpm
2) Based on a theoretical 1st layer winding diameter D_{ws}
3) 1,6 x $T1_{(input\ torque)}$ <= $T_{Br.\ static\ max.}$ <= 1,8 x $T1_{(input\ torque)}$
4) w/o cable drum and counter bearing
5) Optional: Axial-Floating possible when installing two planetary gearboxes into one cable drum
6) SAE-working ports **A** and **B** at rear

Dimensions gearbox

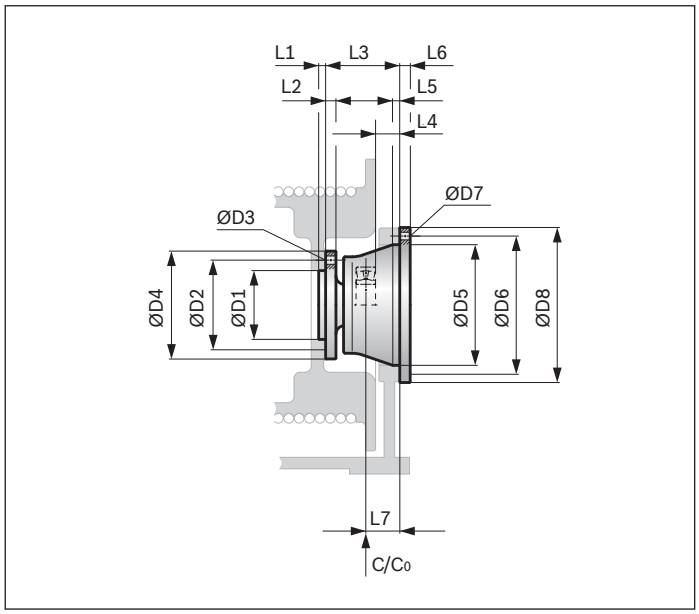


Size GFW	D_{ws}	D1	D2	D3	D4 mm	D5	D6	D7	D8
5110 E	330	210	244	268	12x M14	230	260	284	16x ø17.5
5130 E	380	250	290	320	16x M20	280	305	330	16x ø17.5
5146 E	440	270	310	350	16x M20	320	350	380	20x ø17.5
5146 F	440	270	310	350	16x M20	320	350	380	20x ø17.5
5150 E	500	330	370	410	20x M20	360	400	440	16x ø22
5170 F	545	330	370	410	20x M20x1.5	400	440	474	20x ø22
5185 F	600	380	430	480	20x M24	430	480	520	20x ø26
5190 F	650	380 / 420	430 / 460	466 / 500	28x M24 / 24x M24x2	460	500	540	36x ø22

Size GFW	L1	L2	L3	L4 mm	L5 [1]	L6	L7	C/C_0 (kN)	L mm
5110 E	15	60	166	20	241 ~ 277	24.4	66.9	144 / 272	[1]
5130 E	14	82	166	20	262 ~ 334	40.7	52.9	241 / 480	[1]
5146 E	14	90	184.5	25	288.5 ~ 360.5	53.1	53.1	177 / 424	[1]
5146 F	14	90	220.5	25	324.5 ~ 396.5	53.1	53.1	177 / 424	[1]
5150 E	12	90 / 108.5	234 / 252.5	30	354.5 ~ 378.5	46.8 / 65.3	115.2 / 96.7	276 / 571	[1]
5170 F	14	90 / 114	260 / 284	30	388 ~ 435	43.7 / 67.7	102.8 / 78.8	258 / 607	[1]
5185 F	23	148	282	30	453 ~ 501	92.6	47.6	405 / 1000	[1]
5190 F	21.5	115 / 165	294 / 334	23	480.5 ~ 528.5	75.5 / 125.5	104.5 / 54.5	490 / 1202	[1]

1) Depending on the motor type

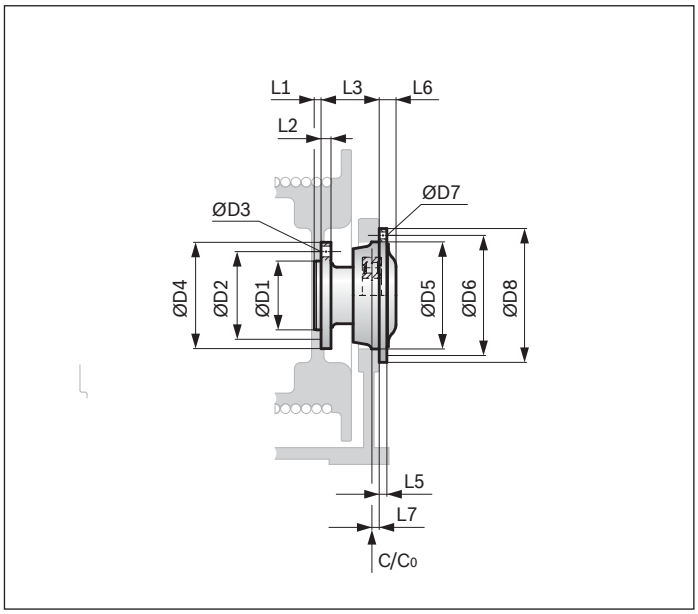
Dimensions counter bearing



(Design with self-align roller bearing)

Counter bearing Size GFW	D1	D2	D3	D4	D5	D6	D7	D8	L1	L2	L3	L4	L5	L6	L7	C/C_0
							mm									kN
5110 E	100	130	8x ø13.5	156	175	200	12x ø11	225	10	15	135	62	10	15	76	167 / 158
5130 E	100	130	8x ø13.5	156	175	200	12x ø11	225	10	15	135	62	10	15	76	167 / 158
5146 E	140	170	12x ø17.5	199	200	230	12x ø13.5	260	10	20	155	62	12	18	85.5	175 / 238
5146 F	140	170	12x ø17.5	199	200	230	12x ø13.5	260	10	20	155	62	12	18	85.5	175 / 238
5150 E	140	170	12x ø17.5	199	200	230	12x ø13.5	260	10	20	155	62	12	18	85.5	175 / 238
5170 F	140	170	12x ø22	204	225	260	12x ø18	290	15	25	170	60	15	20	84	425 / 501
5170 F	150	190	12x ø22	224	225	260	8x ø18	290	15	25	101	-	15	20	9	425 / 501
5185 F	140	170	12x ø22	204	225	260	12x ø18	290	15	25	170	60	15	20	84	425 / 501
5185 F	150	190	12x ø22	224	225	260	8x ø18	290	15	25	101	-	15	20	9	425 / 501
5190 F	140	170	12x ø22	204	225	260	12x ø18	290	15	25	170	60	15	20	84	425 / 501
5190 F	150	190	12x ø22	224	225	260	8x ø18	290	15	25	101	-	15	20	9	425 / 501

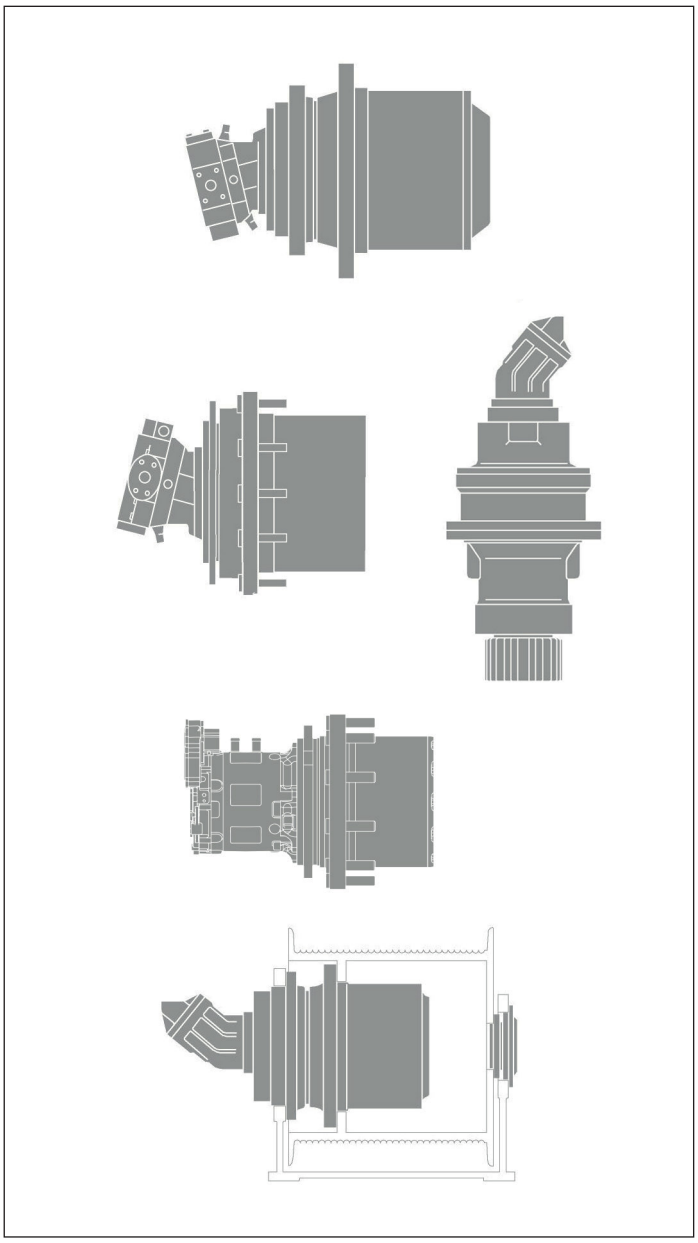
Dimensions counter bearing



(Design with cylindrical roller bearing)

Counter bearing Size GFW	D1	D2	D3	D4	D5	D6	D7	D8	L1	L2	L3	L5	L6	L7	C/C_0
							mm								kN
5110 E	90	115	12x ø14	139	140	157	6x ø9	175	9	13	76	10	22	10	98 / 100
5130 E	90	115	12x ø14	139	140	157	6x ø9	175	9	13	76	10	22	10	98 / 100
5146 E	115	145	12x ø18	174	175	198	6x ø11	220	10	20	76	12.5	26	12.5	124 / 126
5146 F	140	170	12x ø18	199	200	230	12x ø14	260	10	20	77	15	28	12	180 / 190
5150 E	140	170	12x ø18	199	200	230	12x ø14	260	10	20	77	15	28	12	180 / 190
5170 F	150	190	12x ø22	224	225	260	6x ø18	290	16	25	91	15	36	12	239 / 298
5185 F	150	190	12x ø22	224	225	260	6x ø18	290	16	25	91	15	36	12	239 / 298
5190 F	180	220	12x ø22	258	260	295	8x ø18	330	17	25	102	20	39	18	380 / 520

Overview data sheets Gearbox Technology



Hydrostatic travel drives

- HYDROTRAC GFT Large (>130 kNm), series 20, RE 77110, Output torques from 160 to 620 kNm
- HYDROTRAC GFT 2160, series 20, RE 77125 Output torque max. 42,5 kNm
- HYDROTRAC GFT 8000, series 20, RE 79099 Output torques from 7 to 15 kNm
- HYDROTRAC GFT 8000, series 30, RE 77128 Output torques from 20 to 30 kNm
- HYDROTRAC GFT 8000, series 40, RE 77117 Output torques from 7 to 130 kNm
- HYDROTRAC GFT 8150 mit TIS, RE 79093 Output torque max. 42 kNm
- HYDROTRAC GFT 45 T2/T3, RE 77115 Output torque max. 45 kNm
- HYDROTRAC GFT 34, series 20, RE 79062 Output torque max. 34 kNm

Electromechanical travel drives

- ROTATRAC eGFT 8000, series 40, RE 79082 Output torques from 15 to 42 kNm

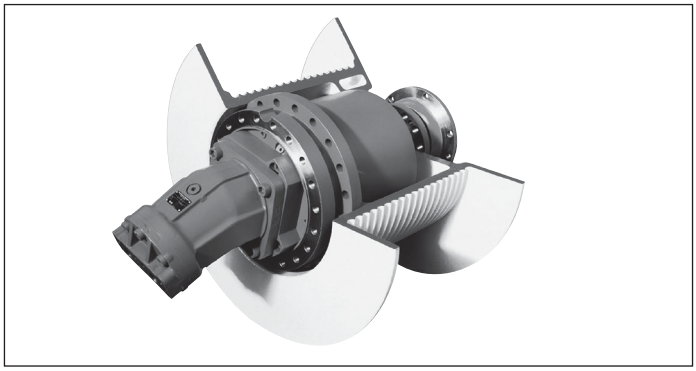
Hydrostatic swing drives

- MOBILEX GFB, RE 77201 Output torques from 4 to 68,3 kNm
- MOBILEX GFB 2160, series 20, RE 77208 Output torque max. 14,5 kNm
- MOBILEX GFB 8000, series 40, RE 79058 Output torques from 4,5 to 54 kNm

Hydrostatic winch gears

- MOBILEX GFT-W Large (>105 kNm), RE 77502 Output torques from 140 to 325 kNm
- MOBILEX GFW 5000, series 40, RE 77506 Output torques from 7,5 to 105 kNm

Winch drives for mobile und stationary applications
MOBILEX GFT-W
Series 30



- Sizes 160 to 450
- Output torques from 140000 to 325000 Nm
- Rope pull forces from 373 kN to 684 kN

Features

- Compact, space-saving three- or four-stage planetary gearbox
- Robust design
- Integrated static multiple-disk parking brake
- Assembly of variable plug-in and fixed plug-in motors of different series possible
- Easy assembly
- Easy oil change

Contents

Description

The hydrostatic winch drive series 30 consists of a three- or four-stage planetary gearbox, which build, in combination with a hydraulic axial piston motor, a compact drive unit. The complete unit can be used for drilling units, mobile and crawler cranes as well as railroad, shipboard, dockside and container cranes.

Application conditions

The winch drives are designed for use in environmental temperatures between -25°C and +40°C. Environmental factors such as salt water, salt air, sand, dust, extreme environmental temperatures, etc. affect the function. Such influences must be pre-announced in order for a secure gearbox design.

Version

2000 = Oil inlet, oil outlet and oil level on the gear cover
4000 = Oil inlet, oil outlet and oil level on the motor-side
6000 = Oil inlet, oil outlet and oil level on the motor-side
Installation of two planetary gearboxes in one cable drum possible
9000 = Special version

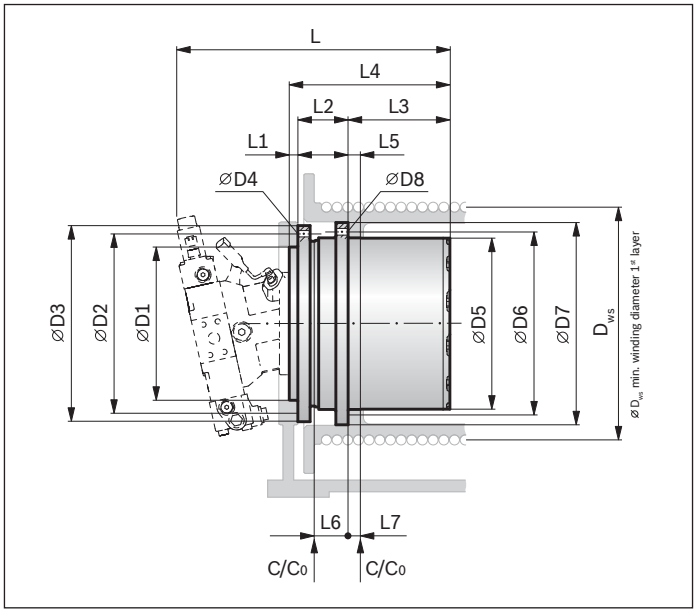
Technical data

Size GFT-W	**Version**	**Design**	**Output torque** $T_{2\,max}$ Nm	**Rope pull force max.**[2] kN	**Ratio** i	**Static holding torque brake** $T_{Br\,max}$ Nm	**Compatible hydraulic motors**
160 W3	4000	T	140000	373	133.0 • 210.8 • 251.0	[3]	A2FE 107 • 125 • 180 / A6VE 170 / A6VM 215
220 W3	2000 4000 6000	T	200000	471	145.4 • 246.1 • 293.0	[3]	A6VE 160 / A6VM 200
330 W3	9000	T	275000	595	209.8 • 252.0 • 302.4	[3]	A6VE 250 / A2FE 250
330 W3	9000	K	275000	595	181.67	[3]	2x A6VM 160
450 W4	6000	T	325000	684	293.4 • 421.7	[3]	A6VE 250 / A2FE 250
450 W4	1000	K	325000	684	421.7	[3]	A6VE 250

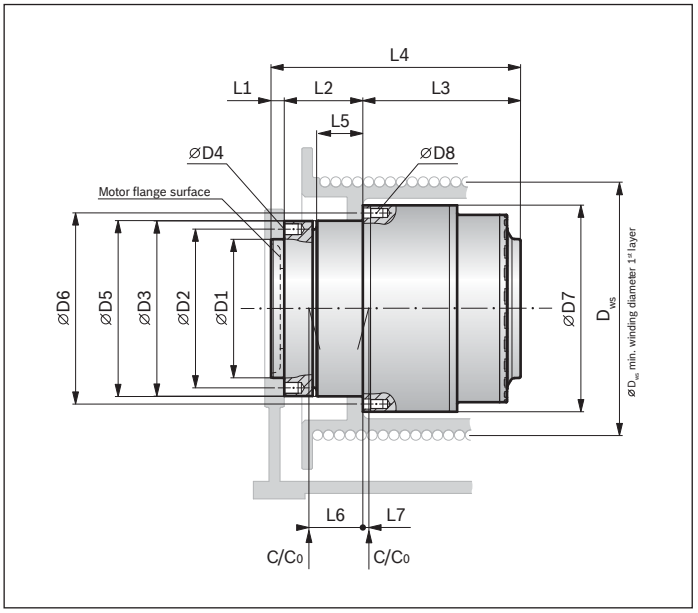
A6VE / A2FE motors in other sizes on request.

1) Design according to FEM L2, T5, M5 (FEM 1.001/3rd edition) at output speed 25 rpm
2) Based on a theoretical 1st layer winding diameter D_{ws}
3) Device-specific

Dimensions gearbox



Design T



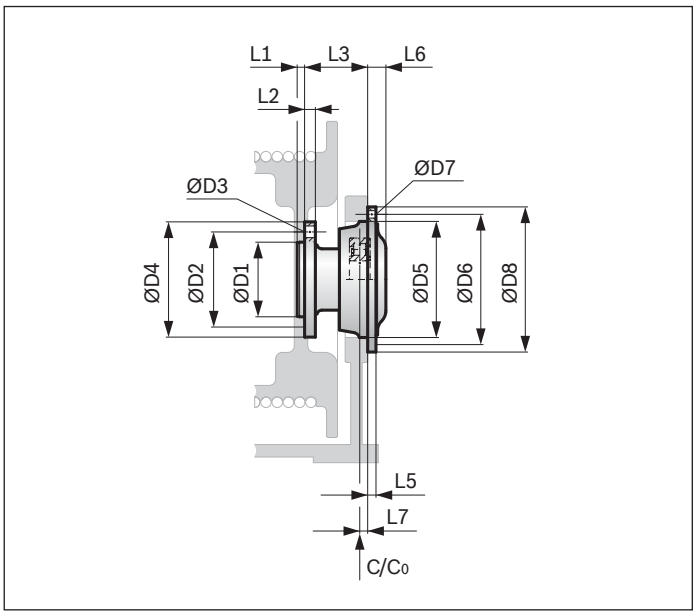
Design K

Size GFT-W	Version	Design	D_{ws}	D1	D2	D3	D4	D5	D6	D7	D8
							mm				
160 W3	4000	T	750	450	510	560	30x M24x2	535	600	650	30x ø30
220 W3	2000 4000 6000	T	850	460	600	650	30x M30	610	680	735	24x ø30 [1] 24x ø33 24x ø33
330 W3	9000	T	925	580	680	735	28x M30	660	730	785	30x ø33
330 W3	9000	K	870	450	515	568	32x M30x2	570	620	668	44x M24x2
450 W4	6000	T	940	580	680	735	34x M30x2	680	750	810	36x ø33
450 W4	1000	K	870	450	515	568	42x M36x1.5	570	620	670	42x M30x1.5

Size GFT-W	Version	Design	L1	L2	L3	L4	L5	L6	L7	C/C_0	L	Appr. weight without motor
							mm			(kN)	mm	kg
160 W3	4000	T	30	168	340	538	65	131.7	20,2	783 / 1557	[2]	750
220 W3	2000 4000 6000	T	45	170	350	565	60	155	35	710 / 1560	[2]	830
330 W3	9000	T	87	188	400	675	80	190	25	1040 / 2450	[2]	1200
330 W3	9000	K	20	255	410	946	70	180	35	1040 / 2450	[2]	1310
450 W4	6000	T	87	156	532	775	37	155	39	1040 / 2450	[2]	1400
450 W4	1000	K	43	255	512	810	150	175	19	1040 / 2450	[2]	1600

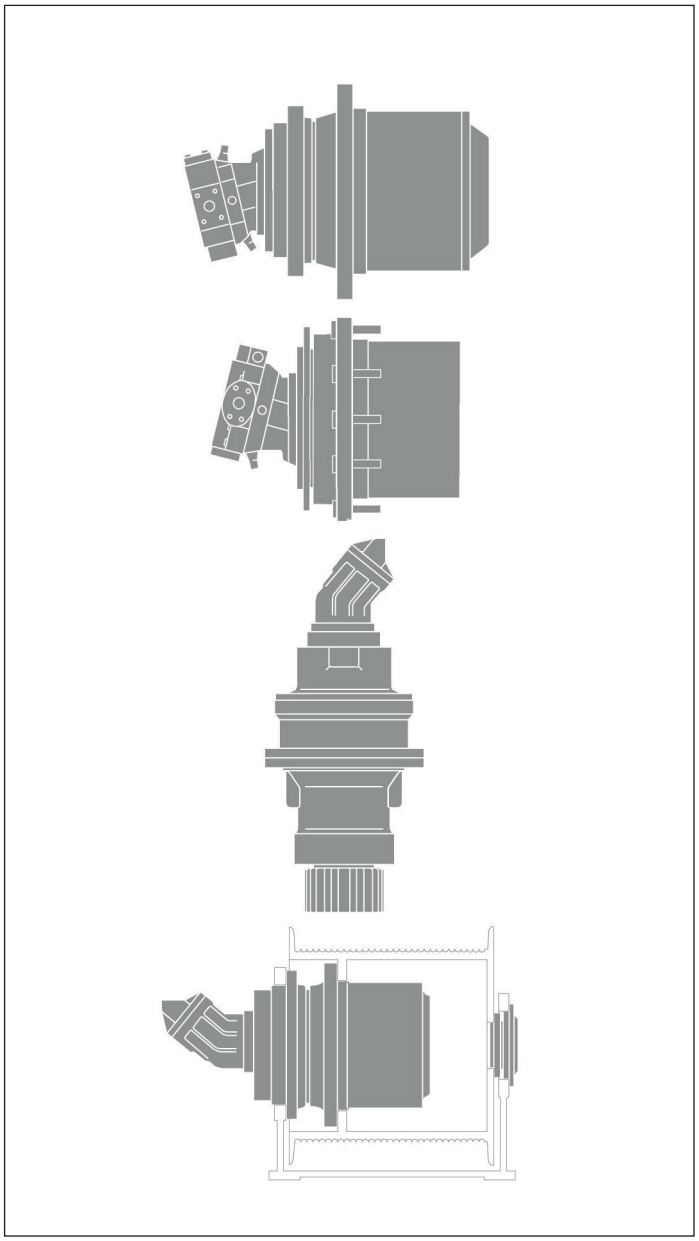
1) 24x M30, is valid for version 2000
2) Depending on motor size

Dimensions counter bearing



Counter bearing Size GFT-W	D1	D2	D3	D4	D5	D6	D7	D8	L1	L2	L3	L5	L6	L7	C/C_0
							mm								kN
160 / 220 / 330	180	220	12x ø22	258	260	295	8x ø18	330	17	25	102	20	39	18	380 / 520

Overview data sheets Gearbox Technology



Hydrostatic travel drives

- HYDROTRAC GFT, series 20, RE 77110
  Output torques from 160 to 450 kNm
- HYDROTRAC GFT 8000, series 30, RE 77128
  Output torques from 20 to 30 kNm
- HYDROTRAC GFT 8000, series 40, RE 77117
  Output torques from 10 to 130 kNm
- HYDROTRAC GFT 45 T2/T3, RE 77115
  Output torques max. 45 kNm
- HYDROTRAC GFT 34, series 20, RE 79062
  Output torques to 34 kNm

Hydrostatic swing drives

- MOBILEX GFB, RE 77201
  Output torques from 4 to 68.3 kNm
- MOBILEX GFB 8000, series 40, RE 79058
  Output torques from 8.5 to 30 kNm

Hydrostatic winch gears

- MOBILEX GFT-W, RE 77502
  Output torques from 140 to 325 kNm
- MOBILEX GFW 5000, series 40, RE 77506
  Output torques from 7.5 to 105 kNm

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