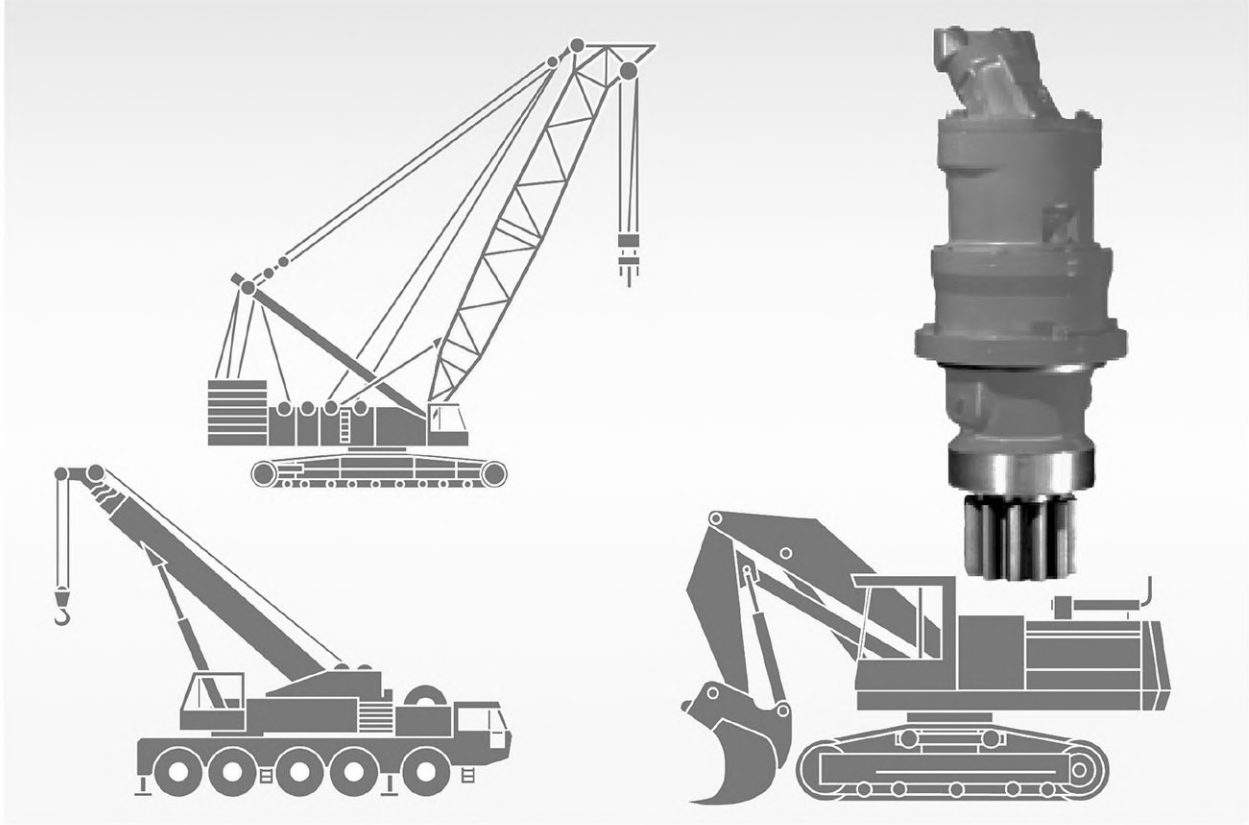




GFB 回转减速机
GFB Swing Drive

回转减速机 / Swing Drive MOBILX GFB

目录

说明

概述
结构特点
使用条件
减速机设计
更高转矩
液压马达
制动器
润滑

机械工作级别和机构利用等级
按 FEM 1987 年版本第 1、3 段

减速机选型

分级示例

减速机规格和最大输出扭矩

Contents

Description

General
Special Features
Application Conditions
Gearbox Design
Higher Torques
Hydraulic Motors
Brake
Lubrication

Driver Groups and Service Time Categories
to FEM, Section I, 3rd Issue 1987

Gearbox Selection

Classification Examples

Gear Sizes and max. Output Torques

MOBILX GFB	17 T2	12700 Nm
MOBILX GFB	17 T3	12700 Nm
MOBILX GFB	26 T2	16500 Nm
MOBILX GFB	36 T2	28500 Nm
MOBILX GFB	36 T3	28500 Nm
MOBILX GFB	40 T2	29000 Nm
MOBILX GFB	50 T2	38000 Nm
MOBILX GFB	50 T3	38000 Nm
MOBILX GFB	60 T2	48500 Nm
MOBILX GFB	60 T3	48500 Nm
MOBILX GFB	80 T2	68300 Nm
MOBILX GFB	80 T3	68300 Nm
MOBILX GFB	110 T3	93300 Nm
MOBILX GFB	220 T3	213000 Nm
MOBILX GFB	330 T3	290000 Nm

定量液压马达

变量液压马达

Hydraulic Constant-Displacement Motors

Hydraulic Variable-Displacement Motors

为适应各种应用情况，减速机可有
2 级 (T2) 或者 3 级 (T3)

The gearboxes are available as two (T2) or three-stage
(T3) units to suit the individual application.

回转减速机 / Swing Drive MOBILEX GFB

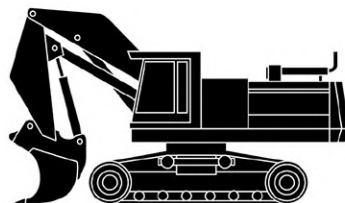
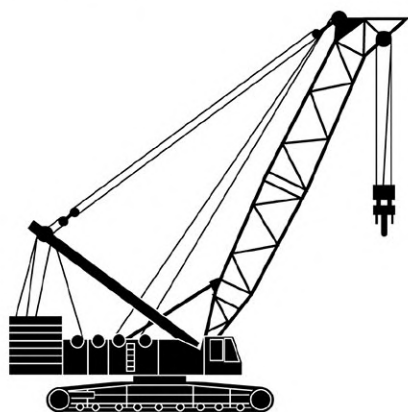
说明

概述

静液压回转减速机 MOBILEX GFB 是理想的传动装置。这种装置在最不利的环境下经受了考验, 显示其高性能。回转减速机在各式挖掘机, 起重机, 船舶卸货装置、林业设备, 以及凡有旋转运动的设备中得到广泛应用。由于该装置结构形式特别紧凑。所以它特别适于安装到节省空间的设备中。此装备便于安装和维修。由于使用了经硬化处理的齿轮和经氮化处理的内齿轮, 同时生产工艺质量很高, 因而保证了该设备非常好的承载能力, 运行可靠和低噪音。齿轮系统是按 L+S 计算机程序设计的, 安全可靠。传动装置具有最佳总体效率。

在本表中新列传动装置是经过不断改进和更新的设备。我们可根据特殊要求, 为用户提供各种尺寸和性能的传动装置。

因此, 我们向您建议, 在设计方案阶段帮助您找到最佳传动方案。



Description

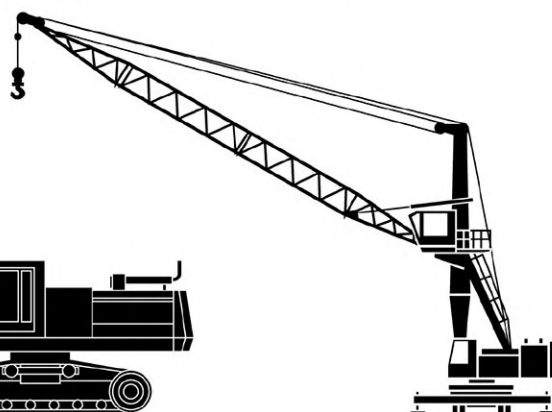
General

The hydrostatic swing gears of type MOBILEX GFB feature high performance and are ideal driving components that have proven their worth under arduous application conditions in the most unfavorable operating environments.

Swing gears MOBILEX GFB are employed in excavators and cranes of all types, in ship unloading equipment, forestry equipment and in all applications where slewing operations have to be performed. Due to their extremely compact size they are best suited for direct mounting inside the equipment. Their design provides for ease of mounting and maintenance.

The use of case-hardened gearwheels and nitrited annulus gears has resulted in low-noise running characteristics, and a consistently high manufacturing standard ensures excellent load carrying ability and outstanding operational reliability. The teeth of the gearwheels are optimized on the basis of L+S computer programs and yield highest safety margins. The drives feature an optimum total efficiency.

The gear units described in this bulletin are subject to constant updating and technical advancement. To suit the specific needs of our customers with respect to dimensions and output further variants can be made available on request. We are prepared to give advice and provide assistance whenever needed, even in the project stage, to find the most appropriate application solution for you.



特点

- 模块结构中的高性能行星减速机
- 紧凑, 省空间的 2 级或者 3 级行星齿轮结构
- 轴承系统坚固, 能吸收来自回转支承的力
- 安装简单
- 内装多片式停车制动器
- 低噪声运转
- 效率高
- 寿命长
- 换油方便

Special Features

- high-duty planetary gearbox of modular construction
- compact, space-saving, two- or three-stage planetary gear design
- robust bearing system absorbing the forces exerted by the ring gear
- simple mounting
- integrated multiple-disk holding brake
- low-noise running
- high efficiency
- long service life
- easy oil change

回转减速机 / Swing Drive MOBILEX GFB

使用条件

减速机是按使用环境温度范围 $-20^{\circ}\text{C} \sim +40^{\circ}\text{C}$ 设计的。诸如盐水，含盐空气，沙子，灰尘，过压，大的震动。外部冲击负荷，环境温度，腐蚀性介质等环境影响都会损害设备的功能，这些影响必须向用户说明，以保证安全设计。

减速机的设计

减速机的设计是以多年的使用经验为基础的。
在技术数据中所指的最大输出扭矩 $T_{2\max}$ 可参考FEM第3版的第一章和第九章，以及DIN 15020。集合载荷级别L2，工作等级T5。相当于机构工作级别M5。
标准输出转速最大为每分钟25转。
若回转传动要升到另一级别的传动组，必须用系数K对所要求的输出扭矩进行换算（请见第7页）。

更大的扭矩

若用户所需的扭矩比我们表中列出的更大，请随时与我们联系。

液压马达

减速机是按定量或者变量马达的直接法兰连接设计的（最好是选择Brueninghaus Hydromatik公司的产品）。按用户需求也可提供液压马达。

制动器

按照标准，传动装置中应安装有一个弹簧承载，可液压释放的压力多片式停止制动器。

$$T_{Br\text{ sta. min}} = 1,3 \cdot T_1 \text{ (输入扭矩 / input torque)}$$

片式停车制动器不能用作工作制动器。

根据所选择的传动比变化。

润滑

齿轮啮合和轴承需浸渍润滑。传动装置除定期换油以外，无须维护。换油也很容易。必须使用操作指南所指定的润滑油。
换油周期因使用条件而异，此点在操作指南中也有说明。传动轴的小齿轮滚动轴承为脂润滑。

Application Conditions

The gearboxes have been designed for use at ambient temperatures ranging between -20°C and $+40^{\circ}\text{C}$. Environmental influences such as salt water, salty air, sand, dust, overpressure, heavy vibrations, extreme shocks and ambient temperatures, aggressive media and the like will impede the function of the product. To enable a safe design of the winch drive such conditions must be reported to the Factory.

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 1, 3rd Edition and Section IX (FEM - Federation Europeenne de la Manutention), as well as DIN 15020, collective load class L2, service time category T5 corresponding to driver group M5.

The reference output speed is 25 revolutions per minute maximum.

If the swing drive is classified in another driver group the required output torque must be converted by applying factor K (see page 7).

Higher Torques

For gearboxes transmitting torques higher than indicated in the catalog please contact us.

Hydraulic Motors

The gearbox design enables the direct flange attachment of a constant or variable displacement motor (Brueninghaus Hydromatik make to be preferred). If so requested the hydraulic motor can also be included in the gearbox supply.

Brake

The standard supply scope includes a spring-loaded, hydraulically released multiple-disk parking brake arranged on the input side.

The multiple-disk holding brake is not to be used as service brake. The holding torque multiplies with the transmission ratio selected.

Lubrication

The gear teeth and bearings will be splash lubricated.

Save for regular oil changes the drive units do not require maintenance. Changing the oil is done very easily.

Exclusively the oil brands recommended in the operating manual must be used for this work.

The change intervals necessary for the relevant application conditions are also prescribed in the operating manuals.

The pinion-like antifriction bearing of the output shaft has been provided with a forlife grease filling.

回转减速机 / Swing Drive MOBILEX GFB

驱动机构组和运行时间级别

Driver Groups and Service Time Categories

运行时间级别 / Service time category				T 2	T 3	T 4	T 5	T 6	T 7	T 8
假定每天的平均运行时间, 以小时计 Assumed average service time per day in hours				0,25– 0,5	0,5– 1	1– 2	2– 4	4– 8	8– 16	>16
理论寿命, 以小时计 Theoretic service life in hours				400 – 800	800 – 1600	1600 – 3200	3200 – 6300	6300 – 12500	12500 – 25000	25000 – 50000
载荷状态分级 / Collective Load Class				传动机构组, 及K系数/ Driver Group with K Factor						
载荷状态组 / Collective groups	L 1	轻 light	经常为轻载荷, 仅偶尔例外最大载荷 maximum loads occurring in exceptional cases only, slight loads constantly	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
	L 2	中 medium	大约在同一时间内为轻, 中等和高载荷 small, medium and maximum loads about equally distribu- ted over service 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
	L 3	重 heavy	经常承受接近最大载荷 loads always near 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
	L 4	特重 very heavy	经常承受最大载荷 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

减速机选型

- T_2 = 输出扭矩
- T_{2K} = 已修正的输出扭矩
K—系数 根据运行时间级别和载荷状态组
在表中可以查到。

$$T_{2K} = T_2 \cdot K$$

T_{2K} = 减速机选型时 T_{2K} 必须 $\leq T_{2zul}$
(按照列表)。

Gearbox Selection

- T_2 = output torque
- T_{2K} = corrected output torque
K Factor according to service time category and collective
group given in the table.

- T_{2K} of the gearbox to be selected must be $\leq T_{2zul}$ (acc. to
bulletin).

回转减速机 / Swing Drive MOBILEX GFB

分级示例

Classifications Examples

起重机类型 (名称) Type of Crane (Designation)	工作元件 (1) Component Operated (1)	驱动机构类别 Type of Driver				
		起升 Hoisting	回转 Swinging	变幅 Level Luffing	小车行走 Trolley Travelling	起重机 行走 Crane Travelling
安装用起重机 / erection cranes		M 2 – M 3	M 2 – M 3	M 1 – M 2	M 1 – M 2	M 2 – M 3
装卸桥 / loading bridges	吊车钩 / hook	M 5 – M 6	M 4	–	M 4 – M 5	M 5 – M 6
装卸桥 / loading bridges	抓斗或磁铁 grab or magnet	M 7 – M 8	M 6	–	M 6 – M 7	M 7 – M 8
车间用起重机 / workshop cranes		M 6	M 4	–	M 4	M 5
桥式起重机, 碎铁用起重机, 废钢 厂吊车 overhead travelling cranes, ram cranes, scrap yard cranes	抓斗或磁铁 grab or magnet	M 8	M 6	–	M 6 – M 7	M 7 – M 8
卸料平台, 集装箱门式起重机 unloading bridges, container gantry cranes	抓斗或扩张机 hook or spreader	M 6 – M 7	M 5 – M 6	M 3 – M 4	M 6 – M 7	M 4 – M 5
其它门式起重机 (用小车或旋臂起重机) other gantry cranes (with trolley and/or live ring)	吊车钩 hook	M 4 – M 5	M 4 – M 5	–	M 4 – M 5	M 4 – M 5
卸料平台, 集装箱门式起重机 (用小车或旋臂起重机) unloading bridges, container gantry cranes (with trolley and/or live ring)	抓斗或磁铁 grab or magnet	M 8	M 5 – M 6	M 3 – M 4	M 7 – M 8	M 4 – M 5
船台起重机 船厂起重机, 拆卸起重机 berth cranes, shipyard cranes, dismantling cranes	吊车钩 hook	M 5 – M 6	M 4 – M 5	M 4 – M 5	M 4 – M 5	M 5 – M 6
港口起重机 (可旋转式, 门型) 浮式起重机, 浮式桅杆起重机 dockside cranes (sleivable, gantry- type, ...), floating cranes, floating sheerlegs	吊车钩 hook	M 6 – M 7	M 5 – M 6	M 5 – M 6	–	M 3 – M 4
港口起重机 (可旋转, 门式...) 浮式起重机, 浮式桅杆起重机 dockside cranes (sleivable, gantry- type, ...), floating cranes, floating sheerlegs	抓斗或磁铁 grab or magnet	M 7 – M 8	M 6 – M 7	M 6 – M 7	–	M 4 – M 5
用于大型重物 (100 吨以上) 的浮 式起重机, 浮式桅杆起重机 floating cranes and floating sheerlegs for very high loads (normally above 100 t)		M 3 – M 4	M 3 – M 4	M 3 – M 4	–	–
甲板起重机 / shipboard cranes	吊车钩 / hook	M 4	M 3 – M 4	M 3 – M 4	M 2	M 3
甲板起重机 / shipboard cranes	抓斗或磁铁 grab or magnet	M 5 – M 6	M 3 – M 4	M 3 – M 4	M 4 – M 5	M 3 – M 4
建筑工地用塔式吊车 tower cranes for construction sites		M 4	M 5	M 4	M 3	M 3
门式起重机 / derrick tower gantry		M 2 – M 3	M 1 – M 2	M 1 – M 2	–	–
铁路起重机, 允许用于铁路维修 railroad cranes, approved for service in trains		M 3 – M 4	M 2 – M 3	M 2 – M 3	–	–
汽车一起重机 / vehicle-mounted cr.	吊车钩 / hook	M 3 – M 4	M 2 – M 3	M 2 – M 3	–	–

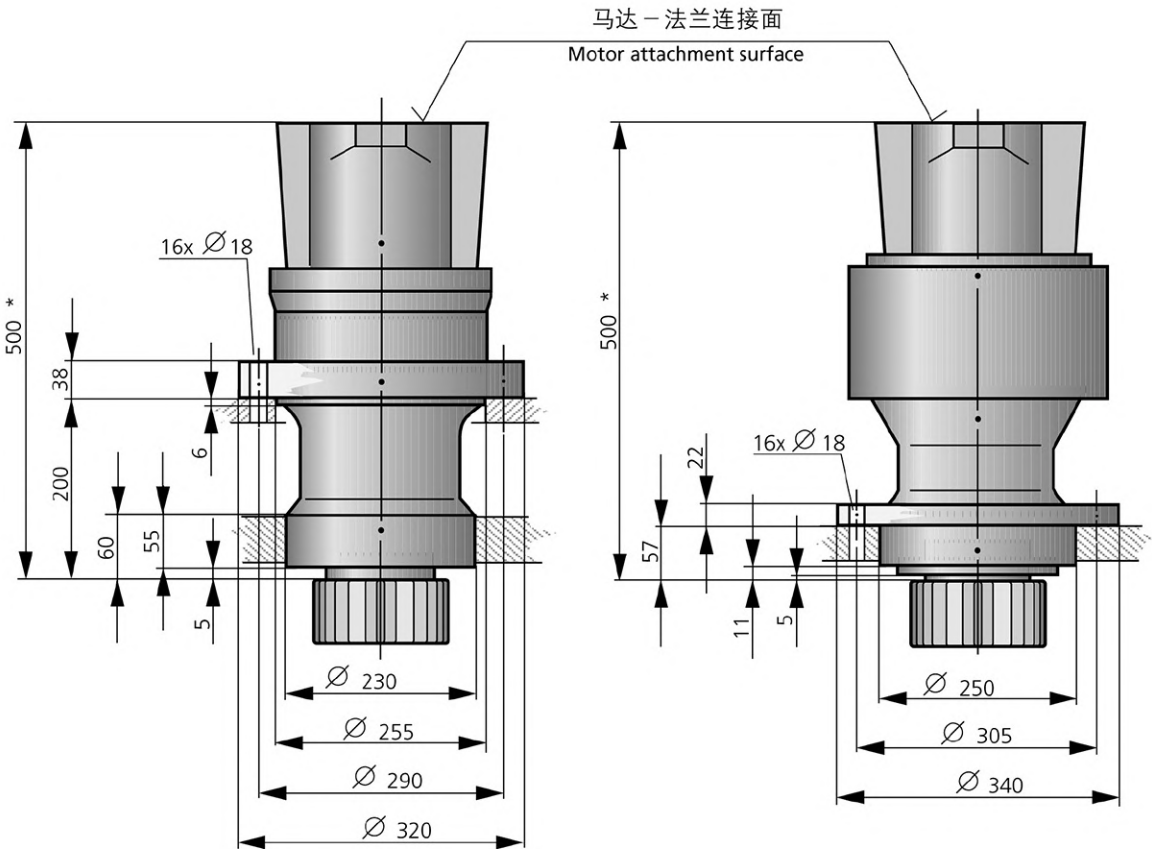
1) 此项仅列出了一些典型应用类别, 仅供参考。

1) This column only shows some typical areas of winch use for informative purposes.

回转减速机 / Swing Drive MOBILEX GFB

GFB 17 T2 1000

GFB 17 T2 2000

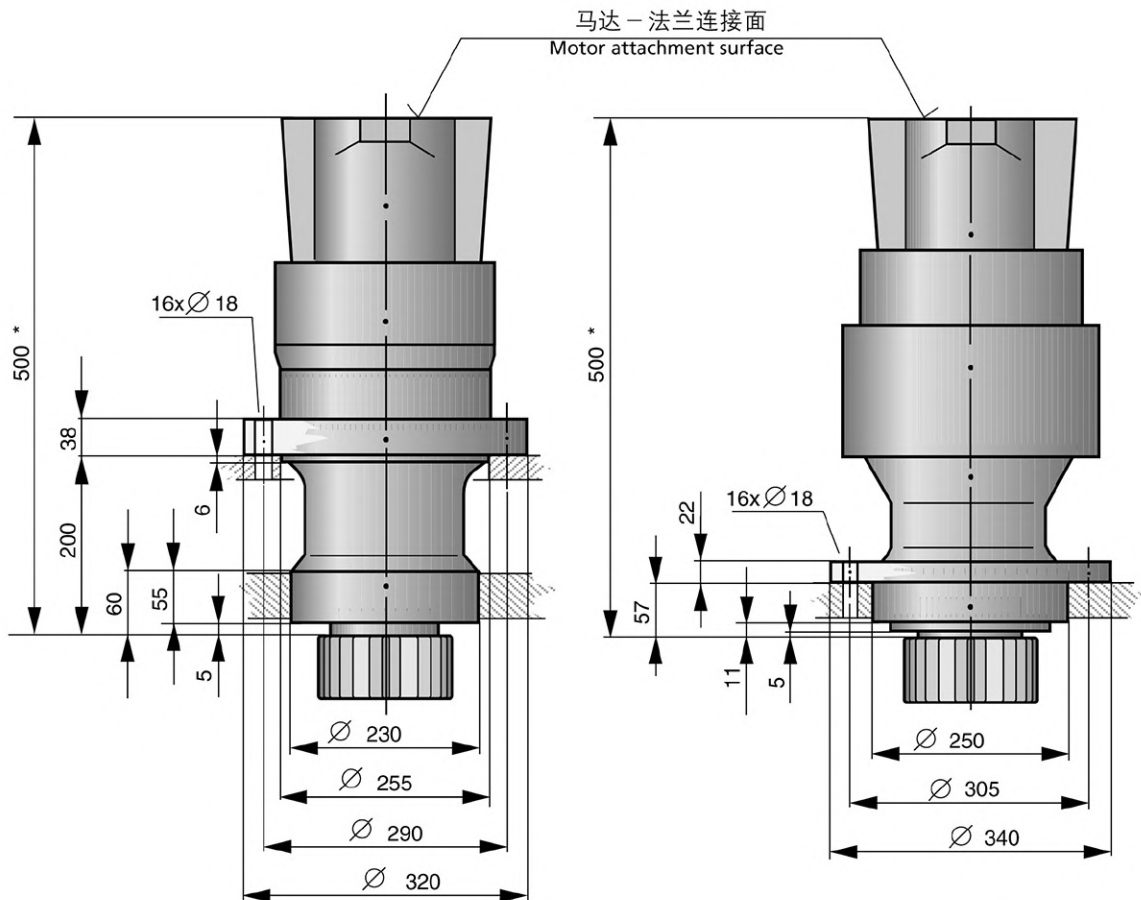


输出扭矩 output torque T_{2zul} Nm		传动比 ratio i	马达连接 motor connection	重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FE	
7700	12700	27,4 33,1 46,4	45 / 61W-NZL * 56 / 61W-NZL * 63 / 61W-NZL *	125

回转减速机 / Swing Drive MOBILEX GFB

GFB 17 T3 1000

GFB 17 T3 2000

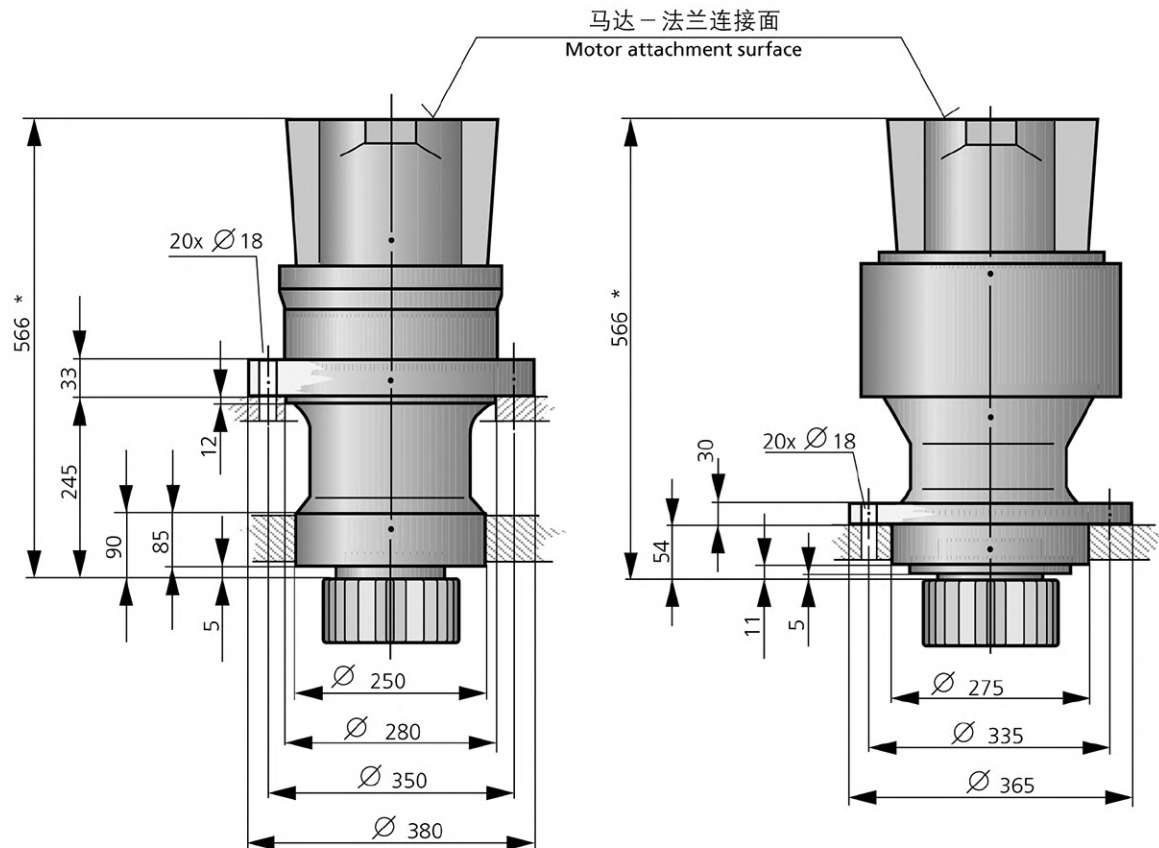


输出扭矩 output torque $T_{2\text{ zul}}$ Nm		传动比 ratio i	马达连接 motor connection	重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FE	
7700	12700	78,9 89,2 103,6	28 / 61W-NAL * 32 / 61W-NAL *	140

回转减速机 / Swing Drive MOBILEX GFB

GFB 36 T2 1000

GFB 36 T2 2000

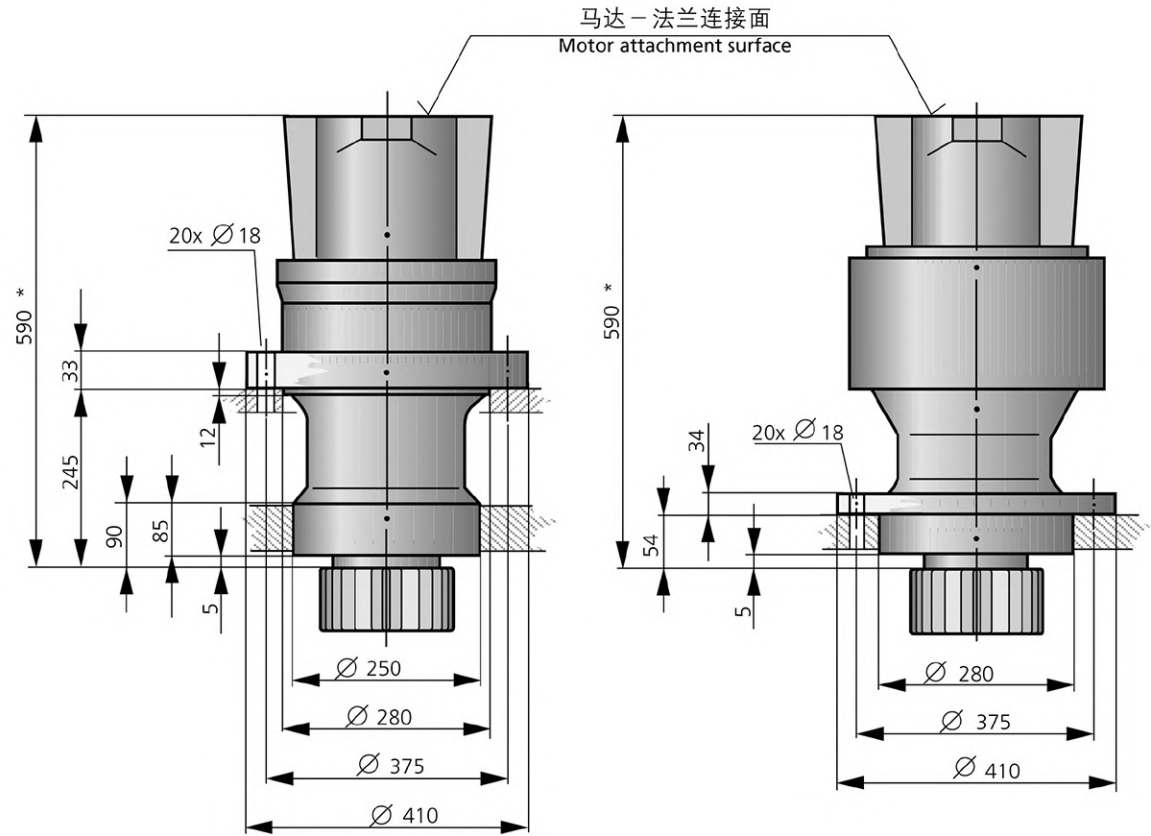


输出扭矩 output torque $T_{2\text{ zul}}$ Nm		传动比 ratio i	马达连接 motor connection	重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FE	
17500	28500	24,0 28,9	80 / 61W-NAL * 90 / 61W-NAL * 107 / 61W-NZL 125 / 61W-NZL	190

回转减速机 / Swing Drive MOBILEX GFB

GFB 40 T2 1000

GFB 40 T2 2000

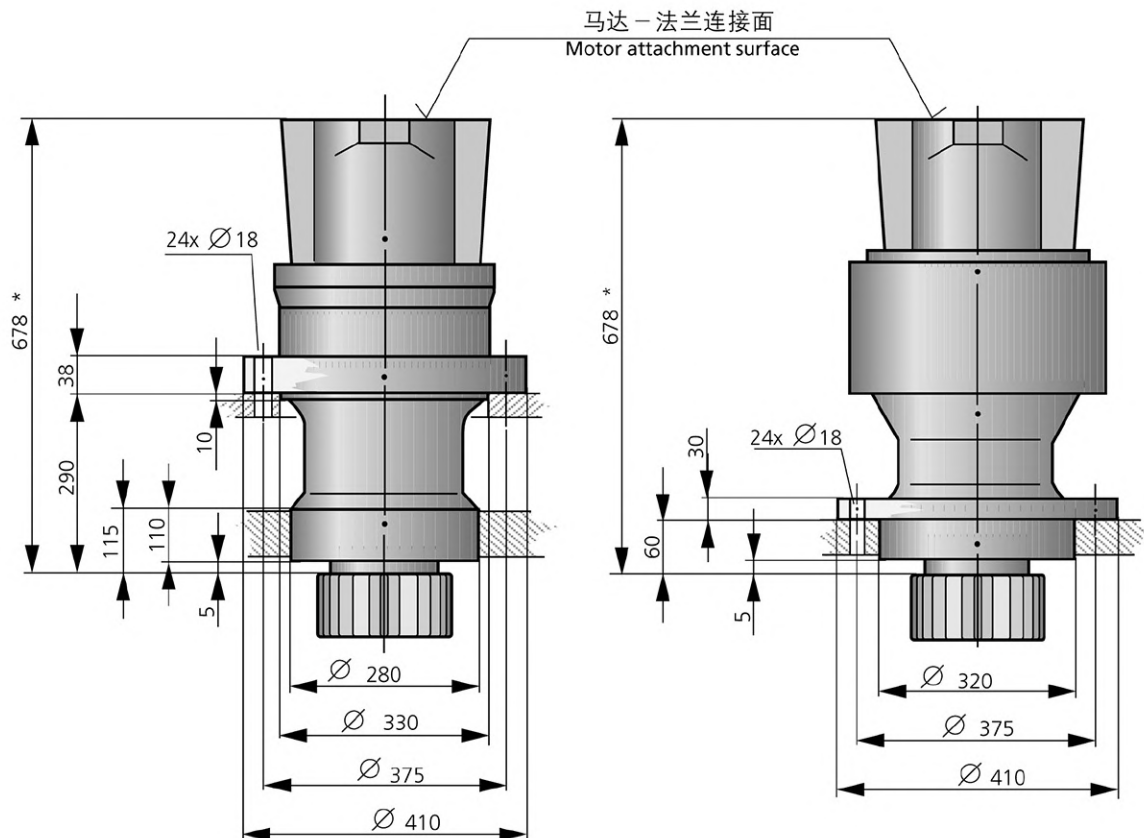


输出扭矩 output torque $T_{2\text{zul}}$ Nm		传动比 ratio i	马达连接 motor connection	重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FE	
18000	29000	36,4 42,0 49,3 60,1	45 / 61W-NZL 56 / 61W-NZL 63 / 61W-NZL 80 / 61W-NAL * 90 / 61W-NAL * 107 / 61 W-NZL 125 / 61 W-NZL	240

回转减速机 / Swing Drive MOBILEX GFB

GFB 50 T2 1000

GFB 50 T2 2000

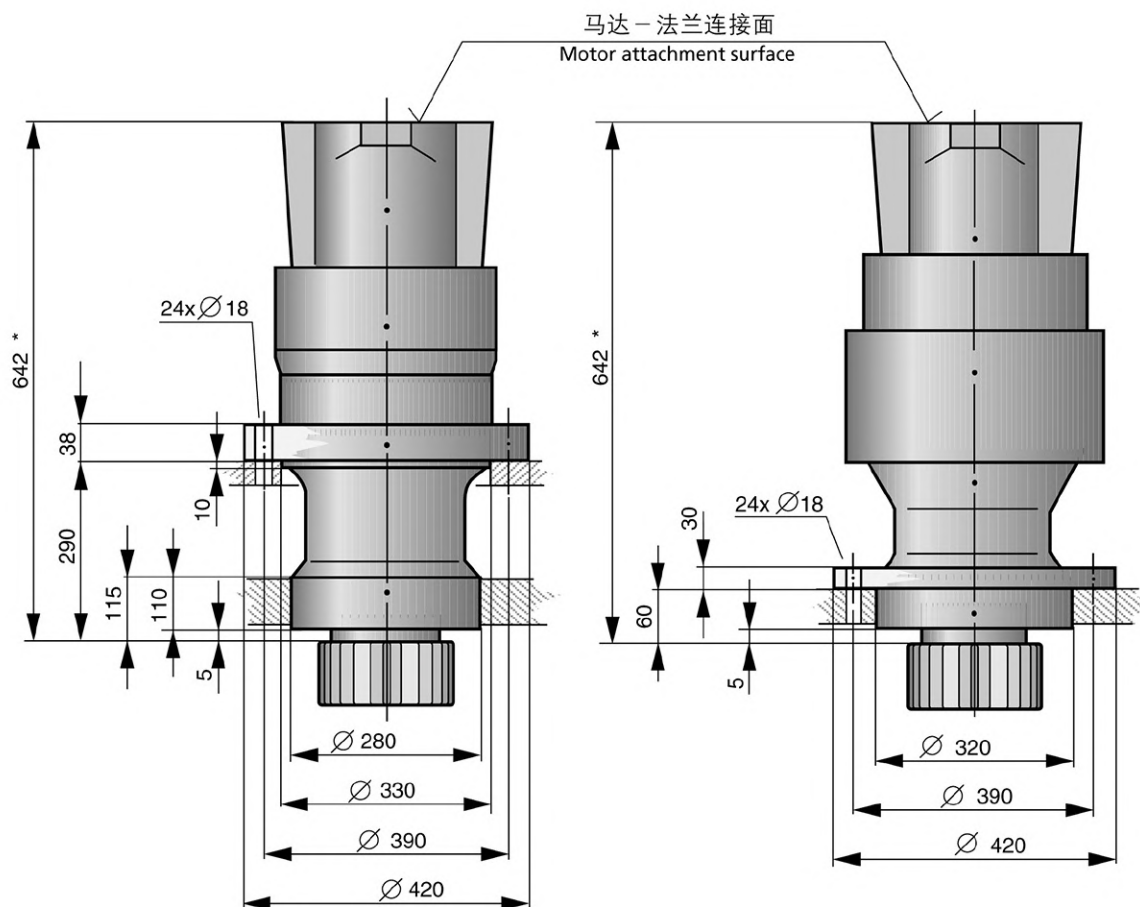


输出扭矩 output torque T_{2zul} Nm		传动比 ratio i	马达连接 motor connection	重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FE	
22000	38000	27,0 32,3 37,8 46,1	80 / 61W-NAL 90 / 61W-NAL 107 / 61W-NZL * 125 / 61W-NZL *	380

回转减速机 / Swing Drive MOBILEX GFB

GFB 50 T3 1000

GFB 50 T3 2000

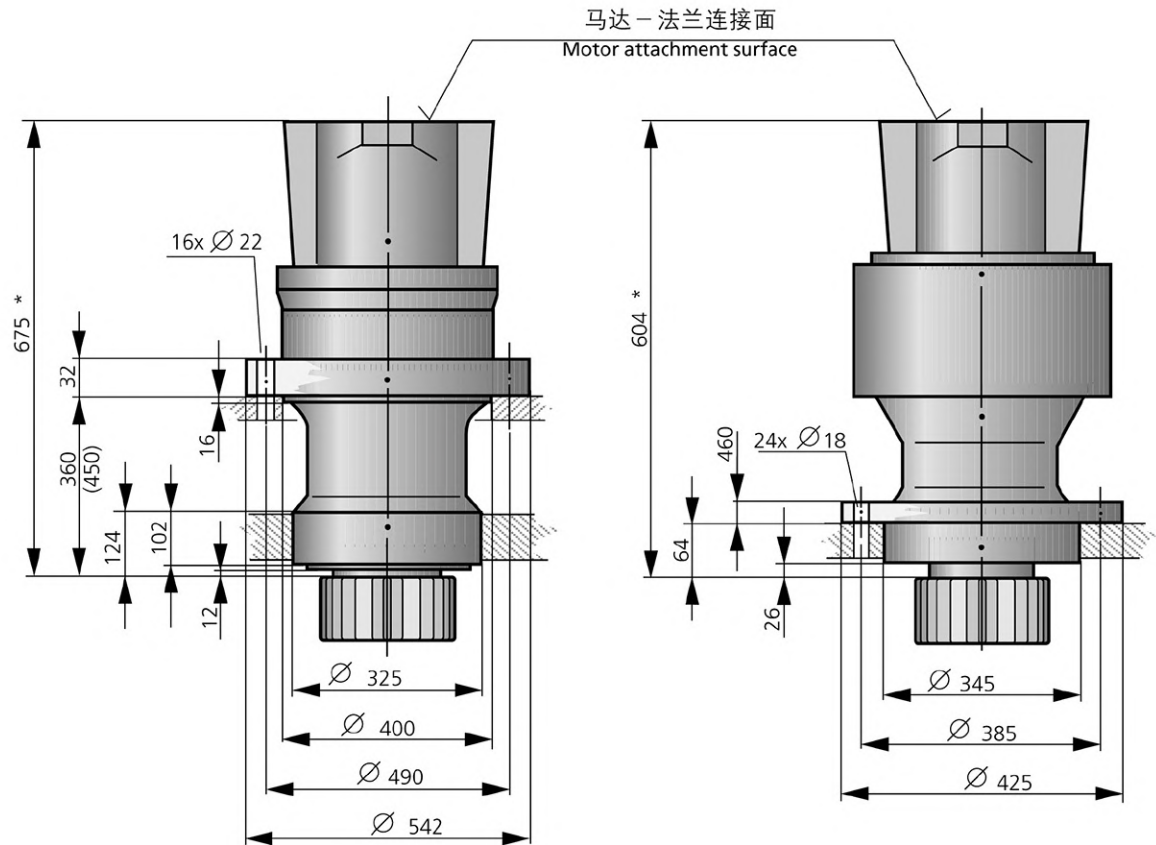


输出扭矩 output torque T_{2zul} Nm		传动比 ratio i	马达连接 motor connection	重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FE	
22000	38000	85,2 92,1 100,7 111,9 126,7 147,4	45 / 61W-NZL * 56 / 61W-NZL * 63 / 61W-NZL * 80 / 61W-NAL 90 / 61W-NAL 107 / 61W-NZL 125 / 61W-NZL	420

回转减速机 / Swing Drive MOBILEX GFB

GFB 60 T2 2000

GFB 60 T2 2000

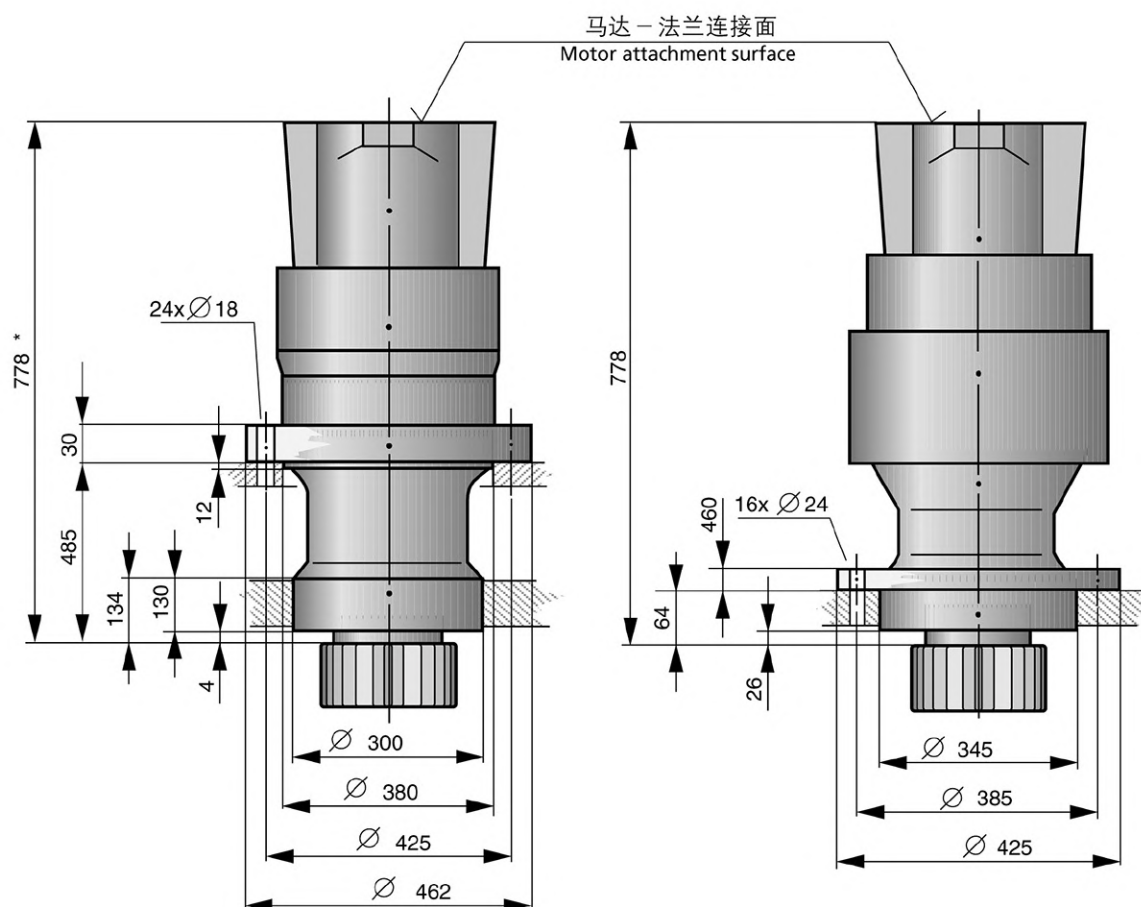


输出扭矩 output torque $T_{2\text{ zul}}$ Nm		传动比 ratio i	马达连接 motor connection	重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FM	
27800	48500	34,0	80 / 61W-NAB 90 / 61W-NAB 107 / 61W-NAB *	450
		40,4	125 / 61W-NAB * 160 / 61W-NAB 180 / 61W-NAB	

回转减速机 / Swing Drive MOBILEX GFB

GFB 60 T3 1000

GFB 60 T3 2000

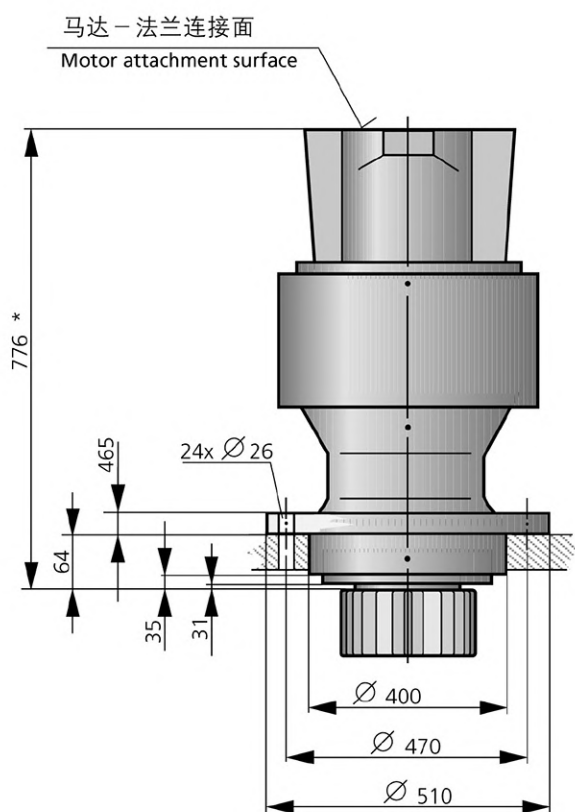


输出扭矩 output torque T_{2zul} Nm		传动比 ratio i	马达连接 motor connection		重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FM	A2FE	
27800	48500	87,5		45 / 61W-NZL	480
		95,8		56 / 61W-NZL	
		106,5	107 / 61W-NAB *	63 / 61W-NZL	
		120,8	125 / 61W-NAB *	80 / 61W-NAL	
		140,9		90 / 61W-NAL	
		170,9			

回转减速机 / Swing Drive MOBILEX GFB

GFB 80 T2 1000

GFB 80 T2 2000



输出扭矩
output torque
 T_{2zul}

Nm
挖掘机
excavator

传动比
ratio
 i

马达连接
motor connection

A2FM

重量
无马达
无油
Weight
without motor
without oil
约 公斤
approx. kg

38200

35,1

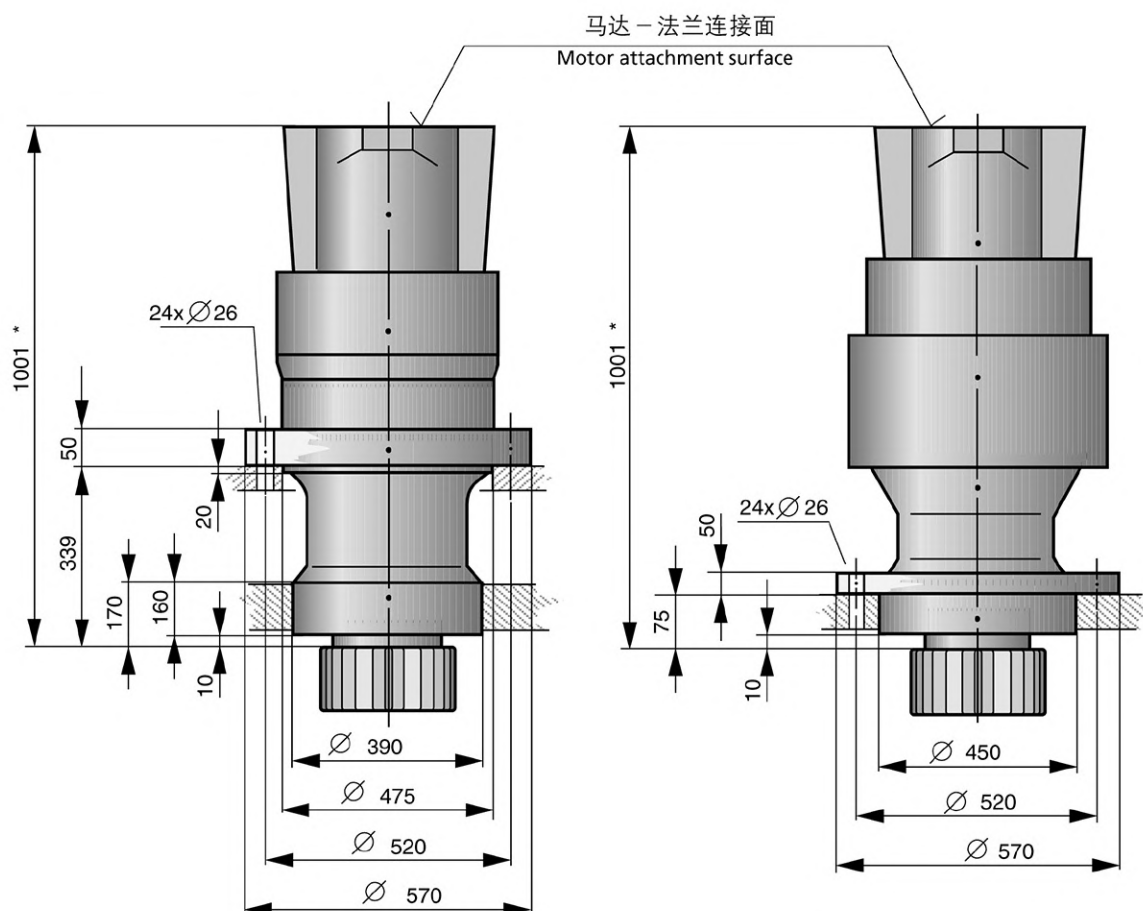
160 / 61W-NAB *
180 / 61W-NAB *

570

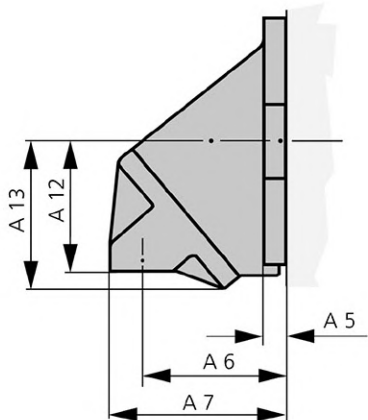
回转减速机 / Swing Drive MOBILEX GFB

GFB 110 T3 1000

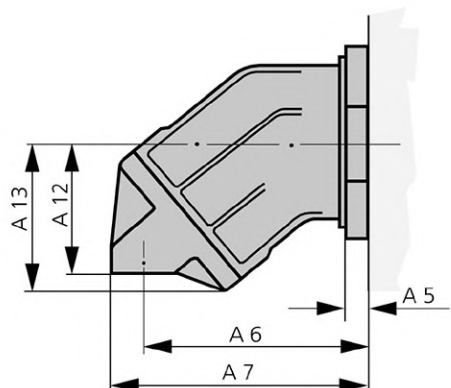
GFB 110 T3 2000



输出扭矩 output torque $T_{2\text{ zul}}$ Nm		传动比 ratio i	马达连接 motor connection		重量 无马达 无油 Weight without motor without oil 约 公斤 approx. kg
挖掘机 excavator	起重机 crane		A2FM	A2FE	
52000	93300	80,5	107 / 61W-NAB *		625
		88,6	125 / 61W-NAB *		
		96,8	160 / 61W-NAB	107 / 61W-NZL	
		129,6	180 / 61W-NAB	125 / 61W-NZL	
		148,2	200 / 61W-NAB		
		174,9	250 / 61W-VZB		

回转减速机 / Swing Drive MOBILEX GFB

**定量马达 A2FE
Constant-Displacement Motor A2FE**

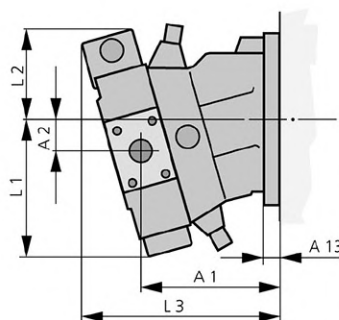
		A5	A6	A7	A12	A13	排量	转速	重量
							Displace- ment Vg	Speed n	Weight
							mm cm ³	1/min	kg
A2FE	28/61	16	94	114	91	106	28,1	6300	10,5
A2FE	32/61	16	94	114	91	106	32,0	6300	10,5
A2FE	45/61	18	109	133	102	119	45,6	5600	15
A2FE	56/61	18	122	146	107	130	56,1	5000	18
A2FE	63/61	18	122	146	107	130	63,0	5000	19
A2FE	80/61	20	127	157	121	145	80,4	4500	23
A2FE	90/61	20	127	157	121	145	90,0	4500	25
A2FE	107/61	20	143	178	136	157	106,7	4000	34
A2FE	125/61	20	143	178	136	157	125,0	4000	36
A2FE	160/61	20	169	211	149	188	160,4	3600	47
A2FE	180/61	20	169	211	149	188	180,0	3600	48
A2FE	250/60	25	*	230	*	172	250,0	2500	73
A2FE	355/60	30	183	231	148	199	355,0	2240	110

**定量马达 A2FM
Constant-Displacement Motor A2FM**


		A5	A6	A7	A12	A13	排量	转速	重量
							Displace- ment Vg	Speed n	Weight
							mm cm ³	1/min	kg
A2FM	28/61	18	158	178	91	106	28,1	6300	9,5
A2FM	32/61	18	158	178	91	106	32,0	6300	9,5
A2FM	45/61	20	166	194	89	122	45,6	5600	13,5
A2FM	56/61	20	182	206	96	130	56,1	5000	18
A2FM	63/61	20	182	206	96	130	63,0	5000	18
A2FM	80/61	20	203	233	104,5	145	80,4	4500	23
A2FM	90/61	20	203	233	104,5	145	90,0	4500	23
A2FM	107/61	23	222,5	252	120	159	106,7	4000	32
A2FM	125/61	23	222,5	252	120	159	125,0	4000	32
A2FM	160/61	25	252	294	134	188	160,4	3600	45
A2FM	180/61	25	252	294	134	188	180,0	3600	45
A2FM	200/61	32	298	323	84	165	200,0	3000	66
A2FM	250/60	25	288	314	93	172	250,0	2500	73

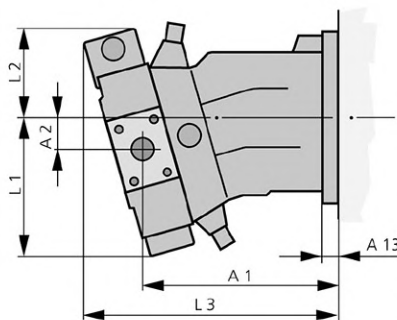
回转减速机 / Swing Drive MOBILEX GFB

变量马达 A6VE
Variable-Displacement Motor A6VE



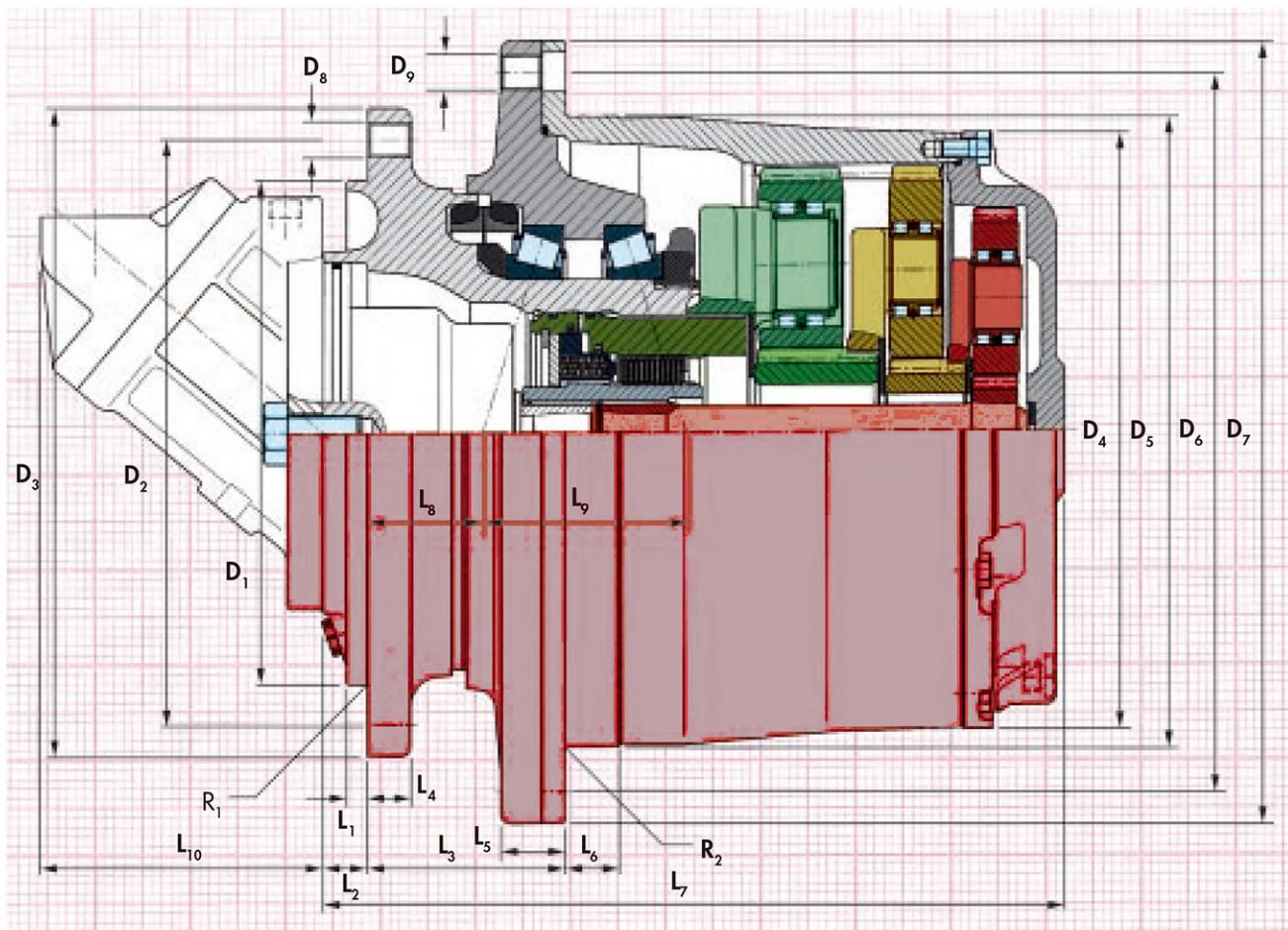
		A1	A2	A13	L1	L2	L3	排量	转速		重量		
									Displace- ment	Speed	Weight		
									$V_{g \max}$	$n_{\max}$ 在/at $V_{g \max}$	$n_{\max}$ 在/at $V_g < V_{g,1}$	$V_{g,1}$	
		mm							cm ³	1/min	1/min	cm ³	kg
A6VE	28/63	91	20	14	162	163	153	28,1	5300	8000	19	16	
A6VE	55/63	123	24	16	151	111	179	54,8	4200	6300	37	26	
A6VE	80/63	130	28	18	167	116	190	80	3750	5600	54	34	
A6VE	107/63	137	30	18	175	122	208	107	3300	5000	71	45	
A6VE	160/63	171	34	20	200	154	245	160	3000	4500	107	64	
A6VE	250/63	204	44	25	248	188	302	250	2500	3300	190	90	

变量马达 A6VM
Variable-Displacement Motor A6VM



		A1	A2	A13	L1	L2	L3	排量	转速			重量	
									Displace- ment	Speed		Weight	
									$V_{g \max}$	$n_{\max}$ 在/at $V_{g \max}$	$n_{\max}$ 在/at $V_g < V_{g,1}$	$V_{g,1}$	
		mm							cm ³	1/min	1/min	cm ³	kg
A6VM	55/63	183	24	20	151	111	238	54,8	4200	6300	37	26	
A6VM	80/63	208	28	23	167	116	269	80	3750	5600	54	34	
A6VM	107/63	220	30	25	175	122	290	107	3300	5000	71	43	
A6VM	140/63	247	33	28	195	132	322	140	3150	4700	93	60	
A6VM	160/63	254	34	28	197	137	329	160	3000	4500	107	64	
A6VM	200/63	267	36	32	209	143	345	200	2750	4100	134	80	
A6VM	250/63	297	44	25	248	188	385	250	2500	3300	190	90	

行走驱动装置



- | | |
|---------------|--------------------|
| 1. 结构紧凑. | 7. 传动平稳, 经久耐用. |
| 2. 高性能. | 8. 可驱动链轮传动. |
| 3. 每级3-7个行星轮. | 9. 可驱动绞车卷筒传动. |
| 4. 齿轮磨齿加工. | 10. 特殊情况可加装机械断开装置. |
| 5. 不同减速比. | |
| 6. 内置湿式多片制动器. | |

参数表:

型号		FD 10	F 13	FD 20	F 30	F40	F 44	F 55	F 60	F 80	F 100	F 130	F 180	F 220	F 360	F 620	F 800	F 1100	F 2200
输出扭矩 1) kNm		10	13	20	30	40	44	55	60	80	100	130	180	220	360	615	800	1100	2200
速比 2)	i	35	19	81	81	66	94	94	108	90	84	85	206	190	223	322	283	406	552
		51	93	90	90	81	124	124	124	102	121	167		248					
		65	108	101	101	90	137	137	147	120	142	206		290					
			122	137	137	101				147	175								
			140	171	171	117	185	185	185		192								
			178	228	228	124					226								
			229			142													
						181													
轴承承载力																			
动载荷	kN	194	194	194/194	132/194	224	224	224	300	300	498	523	787	765	1 040	1960	2485	3900	5100
静载荷	kN	325	325	325/315	255/325	405	405	405	570	570	1010	980	1650	1660	2450	4150	5941	7650	11600
重量 3)	kg	47	49	72	94	120	165	177	230	215	325	452	700	797	1080	2905	3764	7220	10736
多片湿式制动器																			
制动力矩	Nm	200	200	300	300	420	420	420	450	600	600	750	1375	1200	1700	1300	1000	1750	2300
开启压力	bar	16	18	16	16	18	15	15	15	18	17	17	19.5	15	12	25	7.8	20	22
液压马达																			
柱塞马达 4)																			
定排量	A 2 FE	28	28	28	45	45 (80)	45	80	80	80	107	107	160	160	355	(2x) 250	(2x) 250	(2x) 250	(2x) 355
		32	32	32	56	56 (90)	56	90	90	90	125	125	180	180					
					63	63	63			107	160	160							
										125	180	180							
变量马达:																			
	A6VE/VM	28	28	28	55	55 80	55	80	80	80	107	107	160	160	355	(2x) 250	(2x) 250	(2x) 250	(2x) 355
	A10VE	45	45	45						107	160	160							
										160									
规格尺寸:																			
L1	mm	10	10	10	13	16 12	20	12	20	20	35	45	30	18	100	57.5	25	60	70
L2	mm	40	40	41	25	16 35	30	25	25	37	35	45	30	52	100	95	413	395.5	591
L3	mm	72	72	75	75	91 91	91	110	130	90	165	190	168	166.5	130	245	229	503	343
L4	mm	13.5	13.5	15	15	21 21	24	24	28	22	28	35	40	40	40	52.5	46	74	80
L5	mm	26	26	28	29	34 34	36	36	43	35	53	58	56	61	60	50	58	300	100
L6	mm	30	30	25	25	26 26	30	30	30	24	43	45	21.5	35	80	75	170	-	80
L7	mm	243	266	300	323	338 357	399	413	409	415	461	530	534.5	580.5	658	1181.5	1315	1483	1846
L8	mm	15.3	15.3	15.3	28.5	38 38	45	64	28	34	32	50.5	50.3	16	-25	50	161/163	176	217
L9	mm	88.4	88.4	86.3	89	100 100	113	113	127	123	139	147	141.4	187.5	215	233	257/253	368	376
柱塞马达 4)																			
L10 定量马达	mm	-	-	-	146	146 157	146	157	157	157	178	178	211	211	231	-	-	-	-
L10 变量马达	mm	-	-	-	197	197 202	197	202	202	202	205	205		312	-	-	-	-	432
R1	mm	1.6	1.6	2.5	2.5	2.5 2.5	4	1	8	4	12/60	25	4	35°/16/16	18°/100/16	4	6	10	10
R2	mm	1.6	1.6	2.5	2.5	2.5 2.5	2.5	2.5	6	2.5	5	4	3	4	10	-	8	6	10
D1	mm	190	190	240	240	240 270	240	280	350	330	390	390	450	460	580	730	830	1110	1288
D2	mm	230	230	275	275	285 310	285	325	400	370	460	500	510	600	680	810	980	1230	1400
D3	mm	256	256	304	304	320 345	320	360	445	410	500	550	560	650	735	880	1050	1310	1500
D4	mm	215	215	250	269	294 294	331	331	357	364	407	449	528	540	649	880	916	1116	1224
D5	mm	220	220	270	270	295 295	350	350	375	400	408	450	535	542	650	885	920	-	1230
D6	mm	260	260	305	305	335 335	400	400	425	450	460	500	600	600	720	965	976	1170	1320
D7	mm	290	290	335	335	370 370	435	435	466	490	500	550	650	650	775	1020	1055	1226	1400
D8 / D9	M	16/16	16/16	16/16	16/16	20x1.5 20x1.5 16x1.5	20x1.5	20x1.5	24x2	24x2	24x2	24x2	24x2/27x2	24 x 2	30	30x2	30x2	36/30	42x3
数量 D8 / D9		12/8	12/8	18/18	18/18	20/20 16/20	20/20	24/20	24/24	20/20	30/24	32/32	30/30	38/38	30/30	41/48	48/48	52/52	50/48

1) 规定的扭矩是短期内的峰值

2) 可定做其它减速比

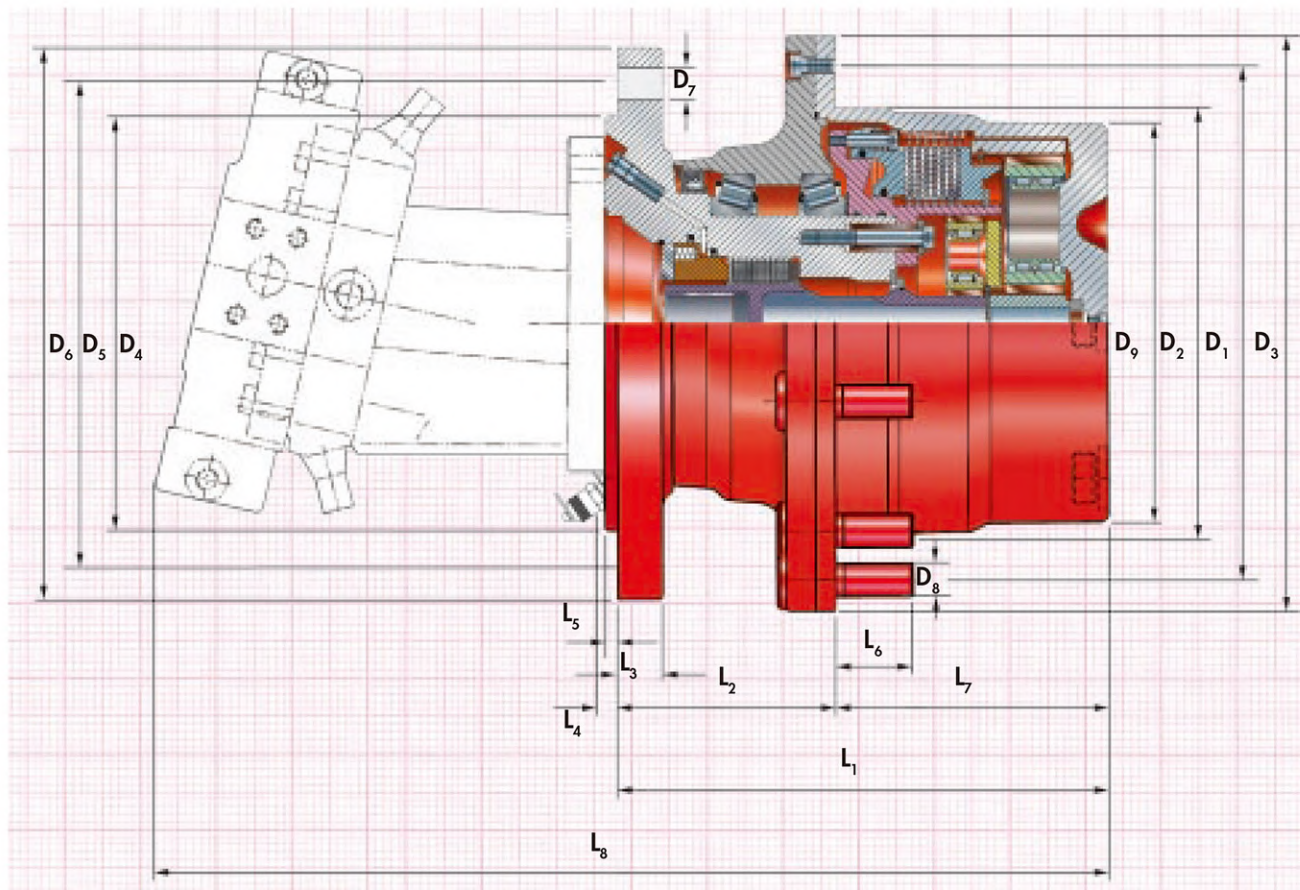
3) 不含液压马达

4) 可根据客户要求提供其它液压马达

项目相关的安装图纸可以根据要求提供,

因为尺寸和技术数据可能会随着持续的发展而改变。

轮边驱动装置



1. 结构紧凑.
2. 模块化设计, 维修方便.
3. 高性能.
4. 齿轮磨齿加工.
5. 一体化盘式驻车制动器.
6. 低磨损盘式通用制动器.
7. 适用于各种液压马达.
8. 高可用性由高强度齿轮和生产质量保证.

9. 应用于飞机牵引车.
10. 托运车.
11. 伐木机械.
12. 叉车.
13. 高空作业车.

参数表：

型号		FR 20	FR 40	FR 60
输出扭矩 ¹⁾	kNm	19	23	30
速比	i	27 32	27 30 32	29 34
轴承承载力				
动载荷	kN	194	300	352
静载荷	kN	325	560	735
最大输入扭矩	Nm	715	715	1,066
不含马达重量	kg	120	173	500
液压马达 ²⁾				
柱塞马达	A 6 VM/VE -	80 107	107	160
最大承受压力	Δp bar	420	420	420
制动类型		片式制动	片式制动	片式制动
最大耐压	bar	63	110	90
制动扭矩	Nm	13,500	12,500	28,000
多片式制动器				
最大释放压力	bar	80	80	60
最小释放压力	bar	40	40	25
最大制动扭矩	Nm	20,900	23,300	29,170
规格尺寸：				
L ₁	mm	318	360.7	510
L ₂	mm	141	135.7	270
L ₃	mm	29	52.7	43
L ₄	mm	9	80	10
L ₅	mm	8	43	10
L ₆	mm	50	63	60
L ₇	mm	177	225	240
L ₈	mm	621	650	783
D ₁	mm	335	425	425
D ₂	mm	280.8 - 0.2	371 - 0.2	375f8
D ₃	mm	375	465	559
D ₄	mm	270f8	290f8	290f8
D ₅	mm	315	367	330
D ₆	mm	359	405	554
D ₇	mm	M 24 x 2	M 24 (6x) M 20 (4x)	10 x M 24 x 2
D ₈	mm	10 x M 22 x 1.5	18 x M 22 x 1.5	24 x M 22 x 1.5
D ₉	mm	260	340	356

1) 规定的扭矩是短期内的峰值

2) 可根据客户要求提供其它液压马达

项目相关的安装图纸可以根据要求提供，
因为尺寸和技术数据可能会随着持续的发展而改变。