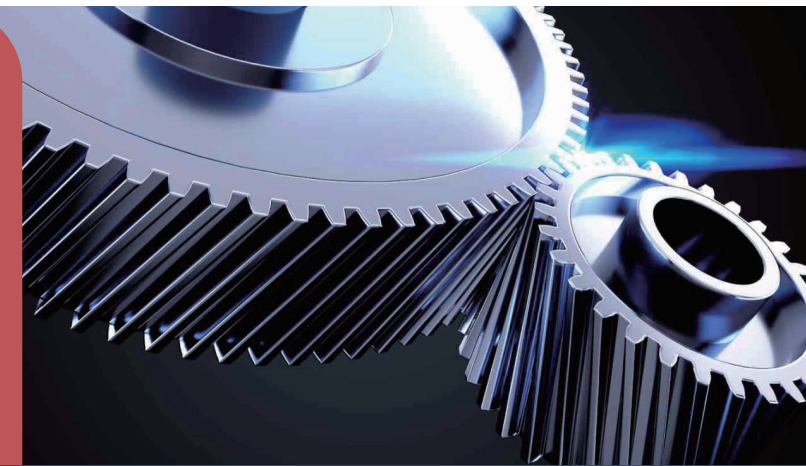


JIANGYIN DELING GEARBOX



愿景 成为齿轮传动行业的知名品牌

使命 为客户带来太阳般的光芒
为员工营造家人般的温暖

核心价值观 团结 创新 尽责 友善 敬业 诚信

Our Vision Become a well-known brand in the gear transmission industry

Our mission Bring sunshine to customers
Create family-like warmth for employees

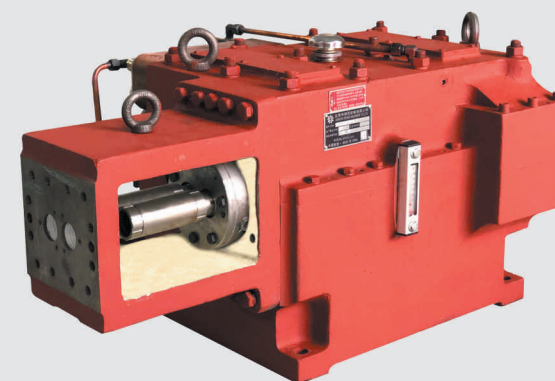
Core value Unite Innovate Dutiful Friendly Dedicated Sincerity

品质齿轮箱专业制造商
Quality gearbox professional manufacturer

江阴市得灵机械有限公司 JIANGYIN DELING MACHINERY CO.,LTD

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同向平双齿轮箱 Parallel Double Gear Box MT9TS/WHTS/DHTS

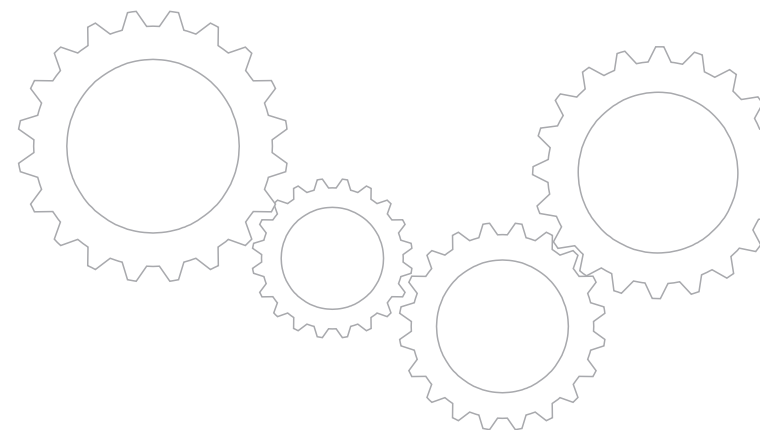
江阴市得灵机械有限公司
JIANGYIN DELING MACHINERY CO.,LTD



匠之心，匠之品
得灵齿轮箱，灵动全球

Exquisite Craftsmanship, Create Quality
Deling Gearbox, Lead the World

橡塑挤出行业齿轮箱领跑者
Rubber and plastic extrusion industry gearbox leader



品质齿轮箱专业制造商
Quality gearbox professional manufacturer

公司简介 Company Profile

江阴市得灵机械有限公司是一家致力于技术、设计开发、生产、机电化经营为一体的综合性企业。公司主要生产普通单螺杆系列ZLYJ、高扭单螺杆系列HXXSGB2、同向平双系列SJK、MT9TS、WHTS、DHTS、普通锥双系列SZ、SZL、SZW、高扭锥双系列HSZL、普通异向平双YPS、高扭异向平双WHYP、LHYP；螺杆泵系列DL、RDL、DDL、GDL等；压裂泵系列QPI。

Jiangyin Deling Machinery Co., Ltd is a comprehensive enterprise dedicated to technology, design and development, production, and electromechanical operations. Our company mainly produces conventional ZLYJ series single screw gearbox; High torque single screw HXXSGB2 series; Co-rotating parallel twin screw SJK, MT9TS, WHTS, DHTS series; Conical Twin screw SZ, SZL, SZW series; High Torque Conical twin screw HSZL series; Counter- rotating parallel twin screw YPS series ; High Torque Counter-rotating parallel twin screw WHYP, LHYP series ; Screw pump DL, RDL, DDL, GDL series, etc.; Fracturing pump QPI series.

产品介绍 Product introduction

同向平双系列是给同向平行双螺杆挤出机配套的专用硬齿面高精度传动装置。为了挤出机制造商提供高质量的动力驱动系统，并在激烈的同产品竞争中取得胜利，本公司不断将设计创新向前推进，把客户的日益增长的产能需求转变为现实。

本公司已在普通同向平双系列的基础上，通过改进传动结构、优化设计，推出了中扭和高扭系列（即MT9TS、WHTS、DHTS系列）。以上系列产品的传动件采用高扭产品专用的合金钢材质，经过渗碳淬火，优化齿面磨齿修形技术。润滑系统采用模块化设计，内外置油路共同强制润滑和冷却系统，运行可靠便于维护。

The Co-rotating parallel twin screw series is a special hard-toothed high-precision transmission device for Co-rotating parallel twin screw extruders. In order to provide extruder manufacturers with high-quality power drive systems and win in the fierce competition for the same product, our company continues to push forward design innovation and transform customers' growing production capacity needs into reality. Our company has launched Medium-torque and High-torque series (i.e. MT9TS, WHTS, DHTS series) on the basis of the ordinary series Co-rotating parallel twin screw gearbox, by improving the transmission structure and optimizing the design. The transmission parts of the above series of gearboxes are made of alloy steel specially used for high-torque products. They have been carburized and quenched to optimize tooth surface grinding and modification technology. The lubrication system adopts a modular design, and the internal and external oil circuits jointly force lubrication and cooling systems, making the operation reliable and easy to maintain.

符号说明

Symbol Description

i_N 额定传动比 Rated transmission ratio	T_2 齿轮箱要求总扭矩 Total torque [Nm]
i_s 要求传动比 Required transmission ratio	T_{2eff} 齿轮箱有效输出总扭矩 Effective output torque [Nm]
i 实际传动比 Actual transmission ratio	FA 要求轴向载荷 Required axial load [KN]
n_1 齿轮箱输入转速 Gearbox input speed [rpm]	FA_N 额定轴向载荷 Rated axial load [KN]
n_2 齿轮箱输出转速 Gearbox output speed [rpm]	p_s 螺杆的压力 Screw pressure [bar]
P_2 工作机的额定功率 working machine Rate power [Kw]	d_s 螺杆直径 Screw diameter [mm]

齿轮箱选型

Gearbox Selection

1

确定传动比 Determine gear ratio: $i_s = n_1 / n_2$

例如：输入转速 For example: input speed: $n_1=1500\text{rpm}$ 输出转速 Output speed: $n_2=500\text{rpm}$
计算传动比 Calculate gear ratio: $i_s = n_1 / n_2 = 5$ 选择最接近公称速比 Select the closest

2

要求总扭矩计算 Required total torque calculation: $T_2 = P_2 * 9550 / n_2$

例如：工作机的额定功率: $P_2=132\text{Kw}$

需要的齿轮箱输出总扭矩 $T_2=9550 * P_2 / n_2 = 9550 * 132 / 500 = 2521.2\text{Nm}$

For example: rated power of working machine: $P_2=132\text{Kw}$

The required total gearbox output torque $T_2=9550 * P_2 / n_2 = 9550 * 132 / 500 = 2521.2\text{Nm}$

3

确定齿轮箱型号 Determine the gearbox model: $T_{2eff} \geq T_2$

例如：齿轮箱中心距为52mm，螺杆直径 $d_s=60\text{mm}$

齿轮箱MT9TS系列中，52-60有效输出总扭矩 $T_{2eff}=2531\text{Nm}$

$2531\text{Nm} \geq 2521.2\text{Nm}$ ，齿轮箱MT9TS系列能够满足要求

For example: the center distance of the gearbox is 52mm, and the screw diameter $d_s=60\text{mm}$

In the gearbox MT9TS series, 52-60 effective output total torque $T_{2eff}=2531\text{Nm}$

$2531\text{Nm} \geq 2521.2\text{Nm}$, the MT9TS series of gearboxes can meet the requirements

4

推力计算 Thrust calculation: $FA = \pi * p_s * d_s^2 / 4 / 10000$

例如：螺杆直径 $d_s=60\text{mm}$ 螺杆的压力 $p_s=100\text{bar}$

推力载荷 $FA = \pi * 100 * 60^2 / 4 / 10000 = 28\text{KN}$

齿轮箱MT9TS系列中，52-60额定轴向载荷 $FA_N=60\text{KN}$

$60\text{KN} \geq 28\text{KN}$ ，齿轮箱MT9TS系列推力载荷能够满足要求

For example: screw diameter $d_s=60\text{mm}$ screw pressure $p_s=100\text{bar}$

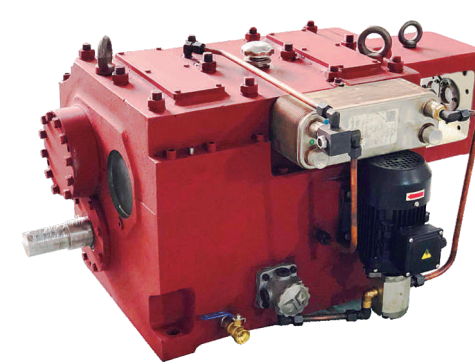
Thrust load $FA = \pi * 100 * 60^2 / 4 / 10000 = 28\text{KN}$

In the gearbox MT9TS series, 52-60 rated axial load $FA_N=60\text{KN}$

$60\text{KN} \geq 28\text{KN}$, the thrust load of gearbox MT9TS series can meet the requirements

MT9TS系列

MT9TS SERIES

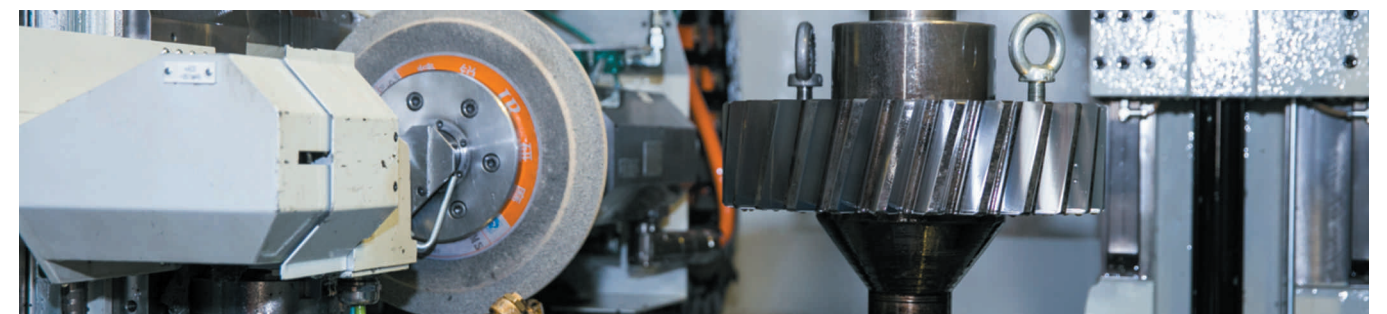
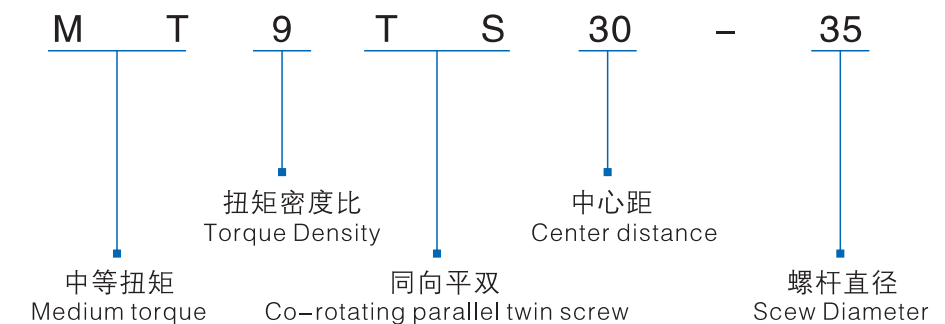


MT9TS现场应用
MT9TS Field Application



型号与命名

Model Naming



产品特性 Product Features

- ▶ 该系列采用上下箱体及单对齿轮啮合结构，通过在材料、结构、修行等方面进行优化，加强输出端齿轴强度，使其达到单轴扭矩密度比 $9\text{Nm}/\text{cm}^3$ 。
- ▶ 上下箱体结构简单，安装方便。箱体采用有限元分析，提高箱体的强度和刚性，保证了轴和齿轮的最佳配合。
- ▶ 在齿轮方面，选用最优的渗碳钢提高整体强度。加大齿根半径来加强轮齿的弯曲强度；减小模数来提高齿面接触强度。优化齿面修形，提高了齿轮的啮合度，降低噪音；优化齿向修形减小齿轮的载荷分布系数，从而提高齿轮寿命。
- ▶ This series adopts an upper and lower box body and a single pair of gear meshing structures. By optimizing the material, structure, practice and other aspects, the strength of the output end tooth shaft is strengthened, so that it can achieve a single-axis torque density ratio of $9\text{Nm}/\text{cm}^3$.
- ▶ The upper and lower boxes have a simple structure and are easy to install. The box adopts finite element analysis to improve the strength and rigidity and ensure the best fit of the shaft and gear.
- ▶ In terms of gears, the optimal carburized steel is selected to improve overall strength. Increase the tooth root radius to enhance the bending strength of the gear teeth; Reduce the modulus to increase the tooth surface contact strength. Optimizing tooth surface modification improves gear meshing and reduces noise; Optimizing tooth direction modification reduces the load distribution coefficient of the gear, thereby increasing gear life.

功率扭矩表 Power Torque Table

型号 Model	中心距 Center Distance	单轴扭矩系数 Single Shaft Torque Coefficient D_f	有效输出扭矩 Effective Output Torque T_{eff}	输出转速 Output Speed				
				300r/min	375r/min	400r/min	500r/min	600r/min
MT9TS30-35	30	≤ 9	486	15Kw	19Kw	20Kw	25Kw	30Kw
MT9TS42-52	42		1334	40Kw	50Kw	55Kw	70Kw	80Kw
MT9TS52-60	52		2531	80Kw	100Kw	100Kw	132Kw	160Kw
MT9TS60-75	60		3888	110Kw	150Kw	160Kw	200Kw	220Kw
MT9TS78-95	78		8542	250Kw	335Kw	355Kw	450Kw	530Kw

备注：1、润滑系统面对输出轴位于左边； 2、输入转速为1500rpm；
3、我们推荐使用最小应用系数 $K_A \geq 1.25$ ；表中齿轮箱有效输出总扭矩应用系数为1.25计算所得

Remarks: 1. If you need other models, please contact us ; the lubrication system faces the output shaft on the left .
2. The input speed is : 1500rpm
3. We recommend using the minimum application coefficient $K_A \geq 1.25$;
the total torque application coefficient of the effective output of the gearbox in the table is 1.25

轴向力 Axial Force

型号 Model	轴向力 Axial force $F_{A_{\text{eff}}}$
MT9TS30-35	15
MT9TS42-52	40
MT9TS52-60	60
MT9TS60-75	80
MT9TS78-95	100

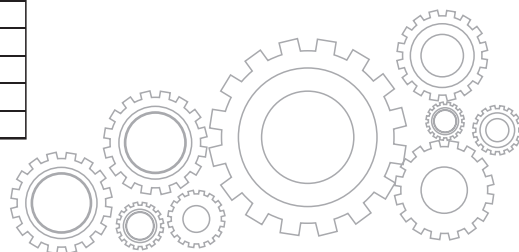
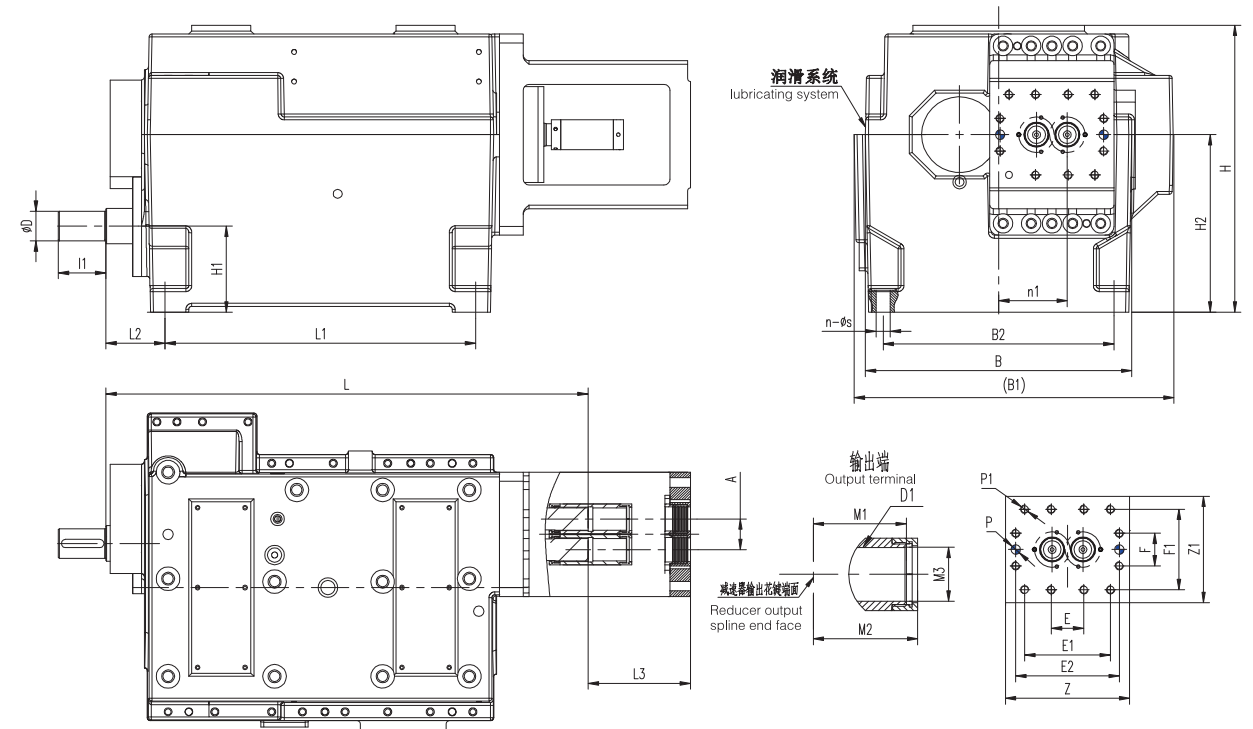


示意图 Sketch Map



技术参数 Technical Parameter

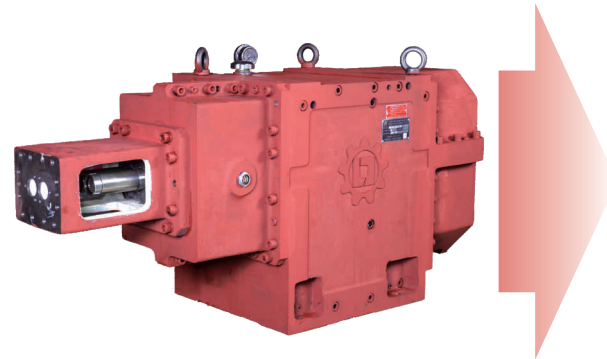
型号 Model	外形尺寸 Size											
	A	L	L1	L2	H	H1	H2	n1	B	B1	B2	n-φs
MT9TS30-35	30	594.5	340	77.5	310	103.07	190	63	290	320	250	4-13.5
MT9TS42-52	42	745	480	80	420	144.43	270	86	390	435	345	4-17.5
MT9TS52-60	52	815.25	525	100	485	145.5	300	116	450	540.41	390	4-24
MT9TS60-75	60	920	590	100	595	181.3	360	90	530	595	470	4-24
MT9TS78-95	78	1180	730	130	635	182.67	400	159	660	740	580	4-28

型号 Model	输入轴尺寸 Input Shaft Size						输出轴尺寸 Output Shaft Size				
	D	I1	D	I1	D	I1	L3	M1	M2	M3	D1
MT9TS30-35	i=1.6-2.8		i=3-4		i=5		104	38	44	17.2	GB/T3478.1-2008 18Zx1mx45R-7H
	35m6	60	20k6	35	20k6	35					
MT9TS42-52	i=1.6-2.8		i=3-4		i=5		150	55	64.5	26	GB/T3478.1-2008 28Zx1mx45R-7H
	50m6	80	30m6	50	30m6	50					
MT9TS52-60	i=1.6-2.8		i=3-4		i=5		173	65.5	73.5	38	GB/T3478.1-2008 26Zx1.5mx45R-7H
	50m6	80	50m6	80	50m6	80					
MT9TS60-75	i=1.6-2.8		i=3-4		i=5		190	68	76	38	GB/T3478.1-2008 26Zx1.5mx45R-7H
	60m6	90	60m6	90	55m6	90					
MT9TS78-95	i=1.6-2.8		i=3-4		i=5		230	110	119	52	GB/T3478.1-2008 28Zx2mx30R-7H
	75m6	140	75m6	140	55m6	140					

型号 Model	法兰尺寸 Size								
	E	E1	E2	F	F1	Z	Z1	P	P1
MT9TS30-35	80	—	122	40	92	160	160	2-Φ10	10-M12
MT9TS42-52	100	—	175	60	128	200	160	2-Φ16	10-M12
MT9TS52-60	55	145	175	55	136	210	180	2-Φ16	12-M14
MT9TS60-75	105	210	230	70	170	260	200	2-Φ16	14-M16
MT9TS78-95	60	160/180	274	100	204	336	328	2-Φ20	16-M16

WHTS系列

WHTS SERIES

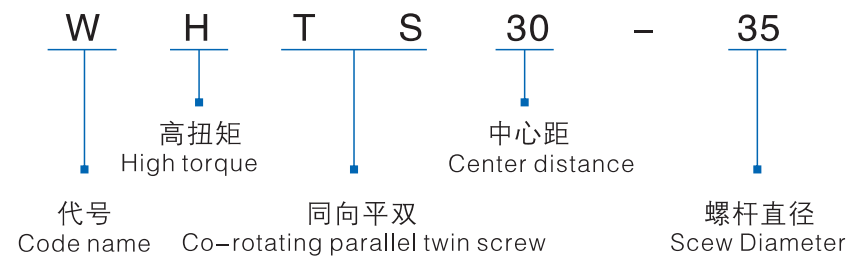


WHTS现场应用
WHTS Field Application



型号与命名

Model Naming



产品特性

Product Features

► 该系列采用箱体分为三段合箱和两齿合一齿啮合结构，通过在材料、结构、修行等方面进行优化，加强输出端齿轴强度，使其达到单轴扭矩密度比11.5Nm/cm³。

► This series adopts a box divided into three sections and a two-tooth-to-one meshing structure. Through optimization in terms of materials, structure, and practice, the strength of the output end gear shaft is strengthened, making it reach a single-shaft torque density ratio of 11.5Nm/cm³.

功率扭矩表

Power Torque Table

型号 Model	中心距 Center distance	单轴扭矩系数 Single Shaft Torque Coefficient D _r	有效输出扭矩 Effective output torque T _{2eff}	输出转速 Output Speed				
				300r/min	375r/min	400r/min	500r/min	600r/min
WHTS23-28.1	23	≤11.5	280	7.5Kw	10Kw	11Kw	15Kw	17Kw
WHTS30-35	30		621	20Kw	25Kw	25Kw	33Kw	39Kw
WHTS43-52	43		1829	55Kw	70Kw	75Kw	95Kw	110Kw
WHTS48-58	48		2544	80Kw	100Kw	110Kw	132Kw	160Kw
WHTS52-60	52		3234	100Kw	125Kw	132Kw	160Kw	200Kw
WHTS60-75	60		4968	155Kw	195Kw	205Kw	260Kw	310Kw
WHTS67.8-85	67.8		7168	200Kw	250Kw	280Kw	335Kw	400Kw
WHTS78-95	78		10915	335Kw	425Kw	450Kw	530Kw	670Kw
WHTS90-110	90		16767	500Kw	630Kw	700Kw	850Kw	1100Kw

备注：1、如需其他型号，请与我们联系；润滑系统面对输出轴位于右边； 2、输入转速为1500rpm；

3、我们推荐使用最小应用系数KA≥1.25；表中齿轮箱有效输出总扭矩应用系数为1.25计算所得

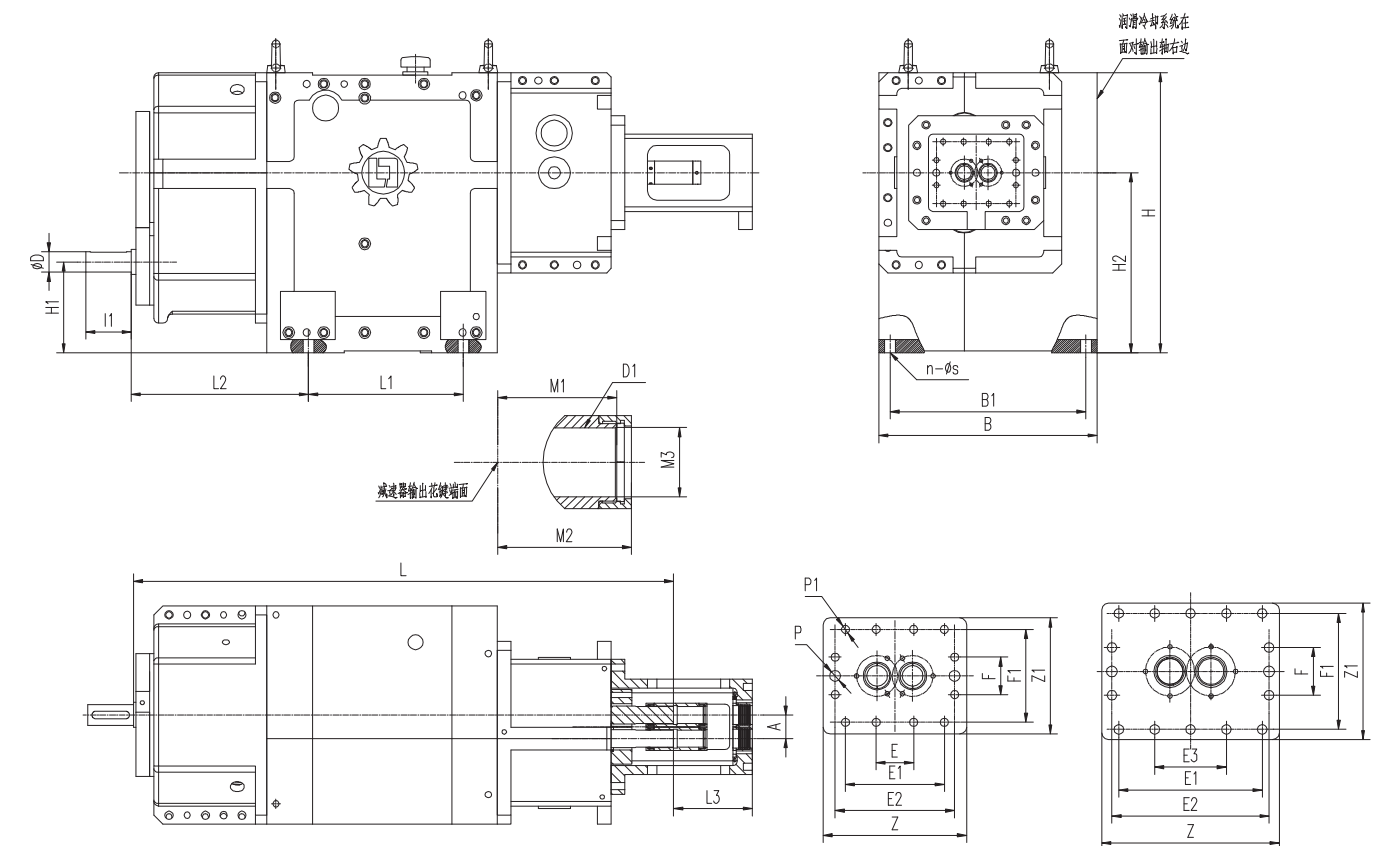
NOTE: 1. If you need other models, please contact us. The lubrication system is located on the right side facing the output shaft.

2. The input speed is 1500rpm

3. We recommend using the minimum application coefficient KA≥1.25; the effective output total torque of the gearbox in the table is calculated by applying the coefficient 1.25

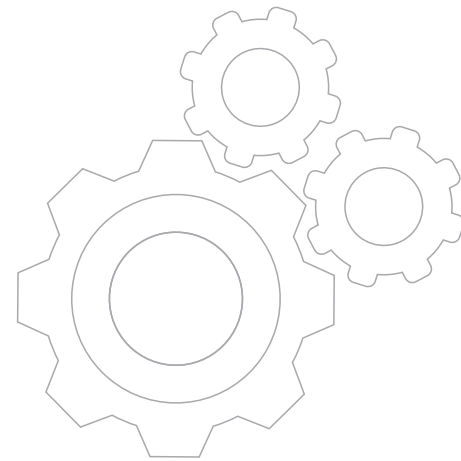
示意图

Sketch Map



轴向力 Axial Force

型号 Model	轴向力 Axial force FA _N
WHTS23-28.1	22
WHTS30-35	34
WHTS43-52	75
WHTS48-58	92
WHTS52-60	99
WHTS60-75	155
WHTS67.8-85	200
WHTS78-95	250
WHTS90-110	335



技术参数 Technical Parameter

型号 Model	外形尺寸 Size									
	A	L	L1	L2	H	H1	H2	B	B1	n-Φs
WHTS23-28.1	23	708	170	241	341	130	201	243	203	6-Φ17.5
WHTS30-35	30	835	244	270	401	145	235	292	252	4-Φ18
WHTS43-52	43	1020	240	340	550	173	345	412	367	4-Φ24
WHTS48-58	48	1124	279	370	540	160	330	430	380	4-Φ24
WHTS52-60B	52	1191.5	340	389.5	616	200	396	480	430	4-Φ24
WHTS60-75B	60	1297	382	430	687	225	447	520	470	4-Φ24
WHTS67.8-85	67.8	1443	361	472	700	210	440	550	500	4-Φ26
WHTS78-95	78	1561	472	489	800	225	510	650	590	4-Φ26

型号 Model	输入轴尺寸 Input Shaft Size				输出轴尺寸 Output Shaft Size				
	D	I1	D	I1	L3	M1	M2	M3	D1
WHTS23-28.1	i=2.5-5				110	31	36	15	GB/T3478-1995 20zx0.75mx30R-7H
	28m6	65							
WHTS30-35	i=2.5-5				104	38	44	17	GB/T3478-1995 18Zx1mx45R-7H
	28j6	63							
WHTS43-52	i=2.5-5				159	55	64.5	26	GB/T3478-1995 28Zx1mx45R-7H
	45m6	100							
WHTS48-58	i=2.5-5				170	55	65	32	GB/T3478-1995 26Zx1.25mx30R-7H
	45m6	100							
WHTS52-60B	i=2.5-5				173	65.5	73.5	38	GB/T3478-1995 26Zx1.5mx45R-7H
	45m6	100							
WHTS60-75B	i=3、3.75		i=2.5、4-5		190	68	76	38	GB/T3478-1995 26Zx1.5mx45R-7H
	48m6	110	55m6	110					
WHTS67.8-85	i=2.5-5				217	75	83	46	DIN5480 N48x1.75mx26zx8f
	65m6	180							
WHTS78-95	i=2.5-5				230	110	119	55	GB/T3478-1995 28Zx2mx30R-7H
	80m6	180							

型号 Model	法兰尺寸 Size									
	E	E1	E2	E3	F	F1	Z	Z1	P	P1
WHTS23-28.1	—	—	122	80	40	92	160	150	2-Φ10	10-M12
WHTS30-35	—	—	122	80	40	92	160	150	2-Φ10	10-M12
WHTS43-52	—	—	175	100	60	128	230	200	2-Φ16	10-M12
WHTS48-58	55	145	175	—	55	136	210	170	2-Φ16	12-M16
WHTS52-60B	55	145	175	—	55	136	210	170	2-Φ16	12-M14
WHTS60-75B	—	210	230	105	70	170	260	200	2-Φ16	14-M16
WHTS67.8-85	50	150	245	—	90	180	280	215	2-Φ16	16-M16
WHTS78-95	60	160/180	274	—	100	204	310	240	2-Φ20	16-M16

DHTS系列

DHTS SERIES



DHTS现场应用
DHTS Field Application



产品特性

Product Features

- ▶ 该系列采用箱体分为上下合箱和两齿合一齿啮合结构，通过在材料、结构、修形等方面进行优化，加强输出端齿轴强度，使其达到单轴扭矩密度比13Nm/cm³。
- ▶ This series adopts a box that is divided into an upper and lower box and a two-tooth-to-one meshing structure, by optimizing materials, structures, modifications, etc., the strength of the output gear shaft is strengthened to achieve a single-axis torque density ratio of 13Nm/cm³.

功率扭矩表

Power Torque Table

型号 Model	中心距 Center distance	单轴扭矩系数 Single Shaft Torque Coefficient D _t	有效输出扭矩 Effective output torque T _{2eff}	输出转速 Output Speed				
				300r/min	400r/min	500r/min	600r/min	800r/min
DHTS30-35	30	≤13	702	20Kw	25Kw	33Kw	40Kw	55Kw
DHTS43-52	43		2068	55Kw	75Kw	90Kw	110Kw	160Kw
DHTS52-60	52		3655	100Kw	132Kw	160Kw	200Kw	280Kw
DHTS60-75	60		5616	160Kw	220Kw	250Kw	315Kw	450Kw
DHTS67.8-85	67.8		8105	220Kw	315Kw	400Kw	500Kw	600Kw
DHTS78-95	78		12338	350Kw	450Kw	550Kw	650Kw	900Kw
DHTS90-110	90		18954	530Kw	710Kw	900Kw	1000Kw	1400Kw

备注：1、如需其他型号，请与我们联系；润滑系统面对输出轴位于左边； 2、输入转速为1500rpm；
3、表中齿轮箱有效输出总扭矩应用系数为1.5计算所得。

Remarks: 1. If you need other models, please contact us ; the lubrication system faces the output shaft on the left .
2. The input speed is : 1500rpm
3. We recommend using the minimum application coefficient KA ≥ 1.25; the total torque application coefficient of the effective output of the gearbox in the table is 1.25



注意事项

Precautions!

- ★ 样本中的附图只是范例，并不具约束力。公司保留变更尺寸的权利。
- ★ 为防止意外事故发生，所有旋转部件均应按照使用者所在国家和地区的安全规范内由购置方加护罩保护；当安装在室外时应避免阳光照射，应由购置方配适当的防护设备。
- ★ 齿轮箱在供货时已配置了径向轴封。如果需要其他类型的油封敬请垂询。
- ★ 齿轮箱在供货时已处于准运行状态，运行前须加注润滑油。齿轮箱所使用润滑油的牌号为ISO VG220/320。
- ★ 齿轮箱采用电机泵组润滑系统，默认电机泵为380V/50HZ的普通电机。如有特殊要求，订货前须提前告知洽谈。
- ★ The drawings in the catalog are examples only and are not binding. The company reserves the right to change dimensions.
- ★ In order to prevent accidents, all rotating parts should be protected by the purchaser with protective covers in accordance with the safety regulations of the country and region where the user is located. When installed outdoors, they should be protected from sunlight and the purchaser should be equipped with appropriate protective equipment.
- ★ The gearbox is supplied with a radial shaft seal. If you need other types of oil seals, please inquire.
- ★ The gearbox is in a ready-to-operate state when supplied and must be filled with lubricating oil before operation. The grade of lubricating oil used in the gearbox is ISO VG220/320.
- ★ The gearbox adopts a motor pump group lubrication system. The default motor pump is a 380V/50HZ ordinary motor. If you have special requirements, please inform us in advance and discuss them before ordering.

生产设备

Processing Equipment



立式加工中心
Machining Center

生产设备

Processing Equipment

数控镗加工中心
CNC Boring Machining Center



磨齿机
Gear Grinding Machine



滚齿机
Hobbing Machine

严谨、务实、永不松懈的工作作风，根植于得灵的每一道工序中，得灵人高度负责的用心溶于每一个产品部件之中，加上先进的制造装备和严格的科学化管理，使每一个生产的成品经得住客户的精挑细选。

The rigorous, pragmatic and never-relaxing work style is rooted in every process of Deling, and the highly responsible and deliberately dissolved in every product component, coupled with advanced manufacturing equipment and strict scientific management, make each finished product pass the customer's careful selection.



齿检测量中心
Gear Inspection Center

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凝炼锋芒 厚积薄发
RISING ABRUPTLY BASED ON ITS
ACCUMULATED STRENGTHS

