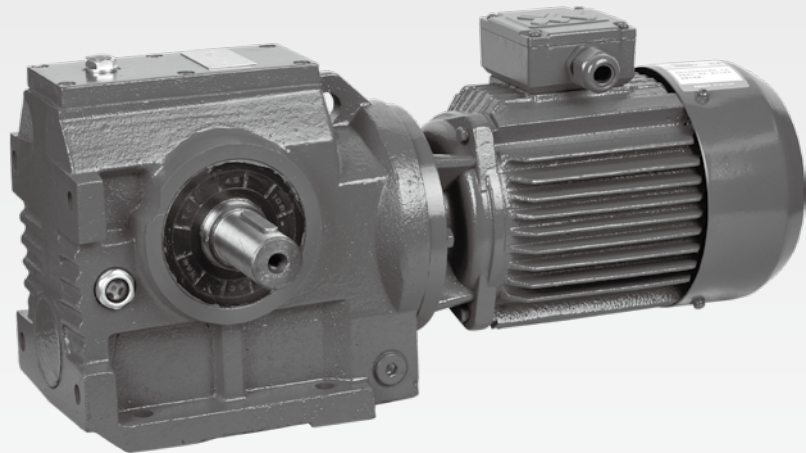
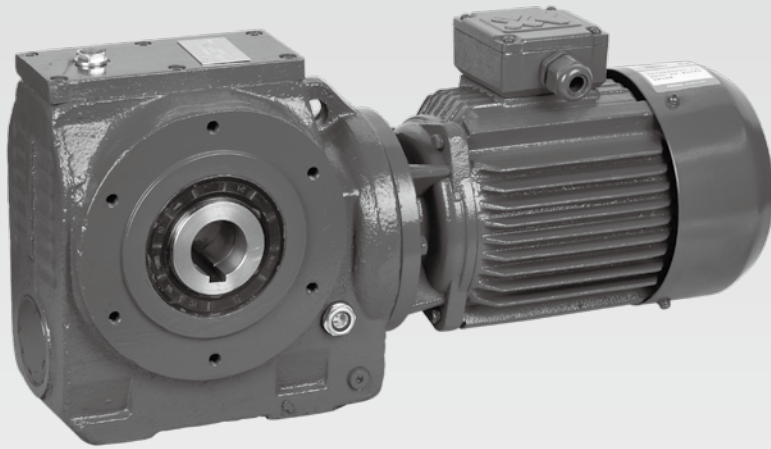


W、WS 系列齿轮 - 蜗轮蜗杆减速机

W,WS Series Gear-worm Gear Reducer



概述 | Introduction

W(WS) 系列减速机为目前我国应用较广泛的齿轮蜗轮蜗杆减速机, 由于设计合理, 安装方便、外型美观、减速比大和空间紧凑等特点, 在饮料、烟草、起重运输、石油化工、冶金矿山等机械装置上被广泛应用。

其主要特点:

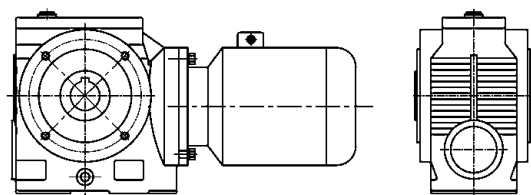
- **结构设计合理:** 本机高速段采用一级斜齿轮传动, 二级低速段采用蜗轮蜗杆传动。不仅使输入中心高和输出中心高之间的距离大大减少, 增加了与各种原动机或变速器匹配的合理性, 重心稳, 而且使整机效率提高;
- **减速比范围广:** 通过不同的齿轮、蜗轮组合, 减速比扩大, 可较方便地实现各种转速的输出;
- **组合能力强:** 本机既可作为单独传动部件, 多方位安装, 也可通过模块式与各种变速器组合, 实现低速无级调速, 具有良好的适应性; 本机主要传动部件都经过严格处理, 精密加工, 使用寿命长、运转平稳、工作可靠。

W (WS) series gear-worm gear reducer is the most widely used gear worm gear reducer in the country. It is now widely used in the transmission equipments in fields of beverage, tobacco, life and transport, metallurgy and mine, as it has reasonable design, convenient assemble method, good appearance, high reduce rate and compact structure.

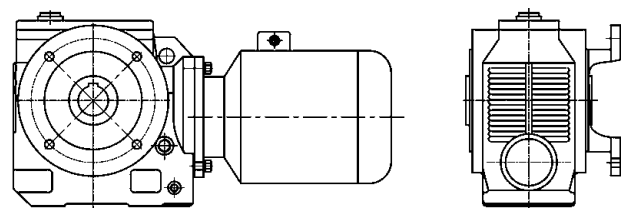
The main characteristics include:

- **Proper designed Structure:** in the high speed section, we adopt first grade gear transmission, while in the low speed section, we adopt gear-worm transmission. Thus the distance between input centre and output centre is reduced dramatically, and the rationality of the match between the prime mover and variators is increased, which provides steady bar center and improves the overall efficiency of the machine.
- **Wide range of reduce rate:** with the combination of different gears and worms, we can enlarge the range of reduce rate, and achieve the output with different speed.
- **High capability of combination:** It can be used either as the module unit of stepless speed variator or as an independent transmission unit, which endows it with high capability of adaptation. All transmission parts in the machine are under strict treatment, precise machining and grinding with long service life, steady running and reliable operation achieved.

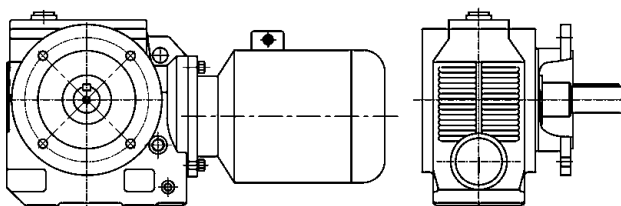
W(WS) 系列减速机设计方案 | Design of W(WS) Series



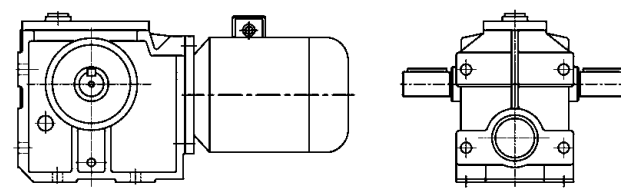
W.../SE...Y...
轴装(空心轴)式安装斜齿-蜗轮蜗杆减速机
Shaft mounted (hollow axis) gear-worm gear reducer with helical gears



W.../SF...Y
轴装(空心轴)法兰式安装斜齿-蜗轮蜗杆减速机
Shaft & flange-mounted (hollow axis) helical gears-worm gear reducer



W.../SK...Y...
轴伸法兰式安装斜齿-蜗轮蜗杆减速机
Shaft extended & flange-mounted helical gear-worm gear reducer

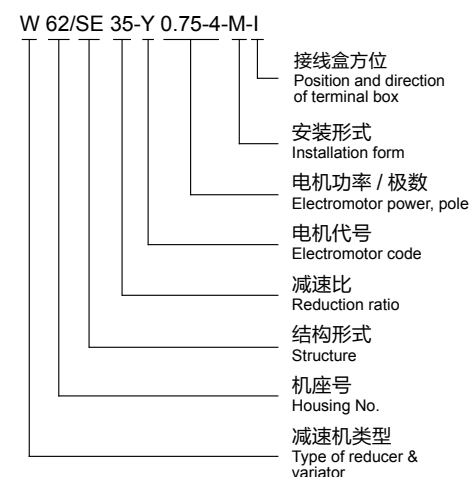


WS...Y...
轴伸式底脚安装斜齿-蜗轮蜗杆减速机
Shaft extended & base-mounted assembled helical-worm gear reducer

W(WS) 系列选型 | Options of W(WS) Series

使用条件及选型结果	使用条件○	选型结果●	Conditions and results	Condition ○	Result ●
○ 负荷容量 (被驱动设备输入功率或输入转矩) Load capacity (Input power or input torque of the driven equipment)			P=1.8KW		
○ 电源电压 / Voltage			380V		
○ 电源频率 / Frequency			50Hz		
○ 要求转速 / Speed required			20r/min		
○ 负荷性质及运转时间 / Load pattern and operation time ● 确认使用系数 / Confirmation of usage coefficient ○ 启动次数 / Number of startups ● 确认启动系数 / Confirmation of startup coefficient ○ 可靠度 / Reliability ● 确认可靠度系数 / Confirmation of reliability coefficient ● 确认运行系数 / Confirmation of performance coefficient			均匀负荷, 14 小时 / 天 K _A =1.25 查表 P2 启动次数: 5 次 / 小时 K _S =1 查表 P4 可靠度: 一般 K _R =1 查表 P4 K=K _A * K _S * K _R =1.25		Uniform load, 14 hours/day K _A =1.25 check the table P2 Number of startups: 5 times/hour K _S =1 check the table P4 Reliability: normal K _R =1 check the table P4
○ 安装形式 / Type of installation ● 确认安装形式 / Confirmation of installation type			轴装 (空心轴) 式安装 W 查表 P150		Shaft mounted (hollow axis) W check the table P150
○ 承载能力计算 / Calculation of bearing capacity ● 确认机型 / Confirmation of machine			M _{2min} =9550*P/ N ₂ =859.5N.m M _{2min} ≥ M _{S2} * K=1074.38N.m 根据 N ₂ 及 M _{2min} 查表 P146 得: W82/SE70-Y4-4 Based on N ₂ and M _{2min} & table P146: W82/SE70-Y4-4		
○ 环境条件 / Environmental condition ● 确认环境条件 / Confirmation of environmental condition			室内、环境温度 28℃ OK		Inside, ambient temperature 28℃ OK
○ 电机规格 / Electromotor specification ● 确认电机规格 / Confirmation of electromotor specification			4KW-4, 380V, 50Hz 无制动器、室内型 / Without brake, for inside OK		
● 结束选型 / End of selection			W82/SE70-Y4-4, 380V, 50Hz 无制动器、室内型 / Without brake, for inside		

W(WS) 系列型号规格表示方式 | Denotation of Specification & Dimension of W(WS) Series



减速机类型 Type of gearbox	机座号 Housing No.	结构形式 Structure	减速比 Reduction ratio	电机代号 Electromotor code	电机功率 / 极数 Electromotor power, pole	安装形式 Installation form	接线盒方位 Position and direction of terminal box
W 斜齿-蜗轮蜗杆减速机 W Inclined gear-worm gear reducer	见选型参数表 See selections Parameter list	轴装式 SE Shaft-mounted SE	见选型参数表 See selections Parameter list	普通 Y ₂ Normal Y ₂	见选型参数表 See selections Parameter list	见表 P150 See the table P150	见表 P6 See the table P6
		轴伸法兰式 SK Shaft-extended & flange-mounted SK		防爆 B Explosion protection B			
WS 斜齿-蜗轮蜗杆减速机 WS Inclined gear-worm gear reducer	见选型参数表 See selections Parameter list	轴装法兰式 SF Shaft & flange-mounted SF	见选型参数表 See selections Parameter list	制动 E Brake E	见选型参数表 See selections Parameter list	见表 P150 See the table P150	见表 P6 See the table P6
				变频 V Frequency conversion V			
				变频制动 VE Brake by frequency conversion VE			
				多速 D Multi-speed D			
				分马力 F Fractional horsepower F			

注: WS 系列型号无结构形式一档
Note: WS series type has no grade one structure

W(WS) 系列选型参数表 | Parameter List Selections of W(WS) Series

机座号 Housing No.	输入功率 (KW) Input power	减速比 Reduction ratio																许用转矩 N.m Permissible torque		
		116	93	70	64	56	50	46	39	35	31	28	23	20	17.5	14	11.7		9.3	
		许用输出转矩 N.m Permissible output torque																		
W32	四极	0.18	75	58	51	45	40	38	35	29	27	26	25	21	18	16	14	11	9	78
		0.25			71	63	56	53	49	40	38	36	35	29	25	22	19	15	12.5	
		0.37						78	72	60	56	53	51	43	37	33	29	23	18.5	
		0.55								78	76	64	55	49	43	34	27.5			
		0.75													75	67	58	46	37.5	
WS32	六极	0.12	75	58	51	45	40	38	35	29	27	26	25	21	18	16	14	11	9	78
		0.18			76	67	60	57	52	43	40	39	37	31	27	24	21	16	13.5	
		0.25							73	60	57	54	52	43	37	33	28	22	19	
		0.37												76	64	55	49	43	34	
四级 4-pole	输出转速 r/min Output speed	12	15	20	22	25	28	30	36	40	45	50	61	70	80	100	120	150		
六级 6-pole	输出转速 r/min Output speed	8	10	13	14	17	19	20	24	27	30	33	40	47	53	66	80	100		

机座号 Housing No.	输入功率 (KW) Input power	减速比 Reduction ratio																许用转矩 N.m Permissible torque		
		116	93	70	64	56	50	46	39	35	31	28	23	20	17.5	14	11.7		9.3	
		许用输出转矩 N.m Permissible output torque																		
W42	四极	0.25	107	100	74	69	63	61	59	51	46	40	36							139
		0.37			110	102	93	90	87	75	68	59	53	44	38	34				
		0.55					139	134	130	112	101	88	79	66	57	50	42	35	29	
		0.75								138	120	108	90	78	69	57	48	39		
		1.1											132	114	101	84	70	57		
		1.5													138	114	96	78		
WS42	六极	0.18	115	108	80	74	68	66	63	55	50	43								139
		0.25			111	103	94	91	88	76	69	60	54	45	39					
		0.37					139	135	130	112	102	89	80	66	58	50	41			
		0.55												137	119	104	85	73		
四级 4-pole	输出转速 r/min Output speed	12	15	20	22	25	28	30	36	40	45	50	61	70	80	100	120	150		
六级 6-pole	输出转速 r/min Output speed	8	10	13	14	17	19	20	24	27	30	33	40	47	53	66	80	100		

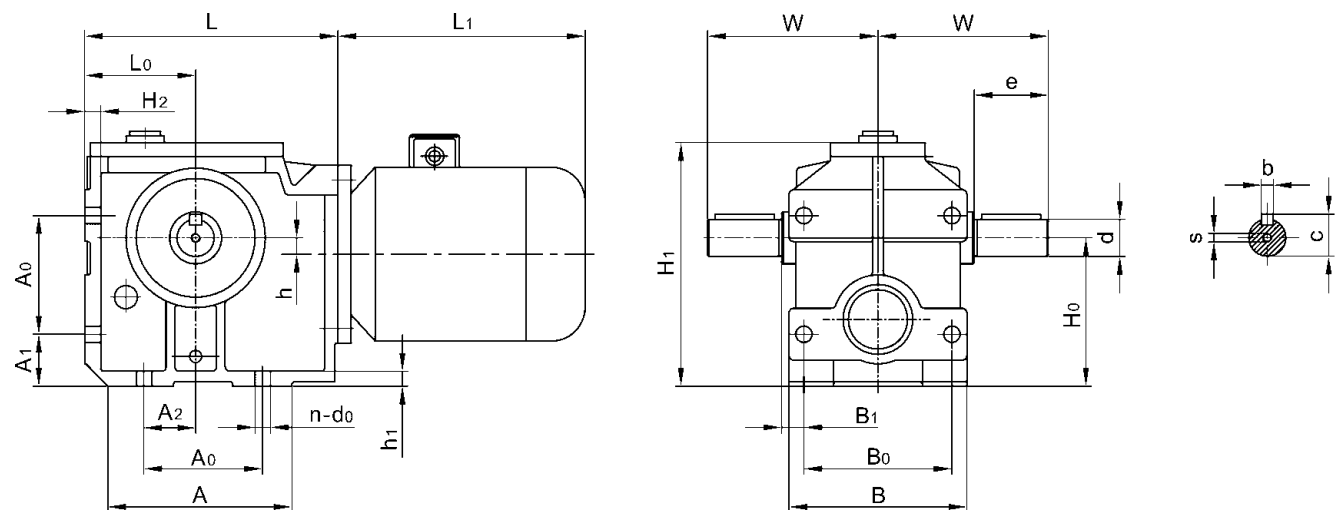
机座号 Housing No.	输入功率 (KW) Input power	减速比 Reduction ratio																许用转矩 N.m Permissible torque		
		118	96	85	71	67	60	50	46	41	36	30	24	20	17	14	12		10	
		许用输出转矩 N.m Permissible output torque																		
W52	四极	0.37	164	137	130	120	118	105	89	84	74									264
		0.55	244	204	193	178	175	156	132	125	110	96	82	67	56					
		0.75			263	243	239	213	180	170	150	132	111	91	77	67	58			
		1.1							264	250	220	193	163	133	113	98	86	74	62	
		1.5										263	223	182	154	133	117	101	85	
WS52	六极	0.25	166	139	132	121	120	106	90	85										264
		0.37	246	206	195	180	177	157	133	126	111	98	82							
		0.55					263	233	198	187	165	146	122	101	85	74				
四级 4-pole	输出转速 r/min Output speed	12	15	17	20	21	23	28	30	34	39	47	58	70	82	100	117	140		
		8	10	11	13	14	15	19	20	23	26	31	39	47	55	66	78	93		

机座号 Housing No.	输入功率 (KW) Input power	减速比 Reduction ratio																许用转矩 N.m Permissible torque		
		129	115	93	75	67	60	50	46	41	35	31	25	20	17.5	14.5	12		10	
		许用输出转矩 N.m Permissible output torque																		
W62	四极	0.55	274	257	217	171	156	142	132	125										517
		0.75	373	350	296	233	213	194	180	170	150	131								
		1.1		514	434	342	312	284	264	249	220	192	176	144						
		1.5				466	425	387	360	340	300	262	240	196	163	144	123			
		2.2								498	440	384	352	288	240	212	180	148	124	
		3										517	480	393	327	289	245	202	169	
WS62	六极	0.37	276	259	218	172	157	143	133	126										517
		0.55	411	385	325	256	234	213	198	187	165	144								
		0.75			443	349	319	290	270	255	225	196	180	147						
		1.1				512	468	426	396	374	330	288	264	216	180	160	134	110		
四级 4-pole	输出转速 r/min Output speed	11	12	15	19	21	23	28	30	34	40	45	56	70	80	96	117	140		
六级 6-pole	输出转速 r/min Output speed	7	8	10	12	14	15	19	20	23	26	30	37	47	53	64	78	93		

机座号 Housing No.	输入功率 (KW) Input power	减速比 Reduction ratio																许用转矩 N.m Permissible torque		
		122	114	97	71	65	59	54	46	40	35	28	23	20	17.5	14	12		10	
		许用输出转矩 N.m Permissible output torque																		
W72	四极	0.75	374	358	322															1072
		1.1	548	525	472	365														
		1.5	748	716	644	498	474	448	402	350	306									
		2.2		1050	944	730	695	657	590	513	449	396	326	276	243	217				
		3				996	948	896	804	700	612	540	444	376	332	296	240	204	172	
		4							1072	933	816	720	592	501	442	394	320	272	229	
		5.5									990	814	689	608	542	440	374	315		
WS72	六极	0.55	411	394	354															1072
		0.75	561	537	483	373	355													
		1.1	822	788	708	547	520	493	441	384										
		1.5		1072	966	746	710	672	602	524	460	404	332							
		2.2					1041	985	883	768	675	592	487	414	366					
四级 4-pole	输出转速 r/min Output speed	11.5	12	14	20	21	23	26	30	35	40	50	61	70	80	100	117	140		
六级 6-pole	输出转速 r/min Output speed	7.6	8	9	13	14	15	17	20	23	26	33	39	47	55	66	78	93		

机座号 Housing No.	输入功率 (KW) Input power	减速比 Reduction ratio																许用转矩 N.m Permissible torque		
		127	108	93	78	70	56	50	46	41	31	28	25	22	18	15	12		10	
		许用输出转矩 N.m Permissible output torque																		
W82	四极	1.1	656																	1752
		1.5	894	721																
		2.2	1312	1058	934	856	770	624	590											
		3		1442	1274	1167	1050	851	804	700	668	518								
		4			1698	1556	1400	1134	1072	935	890	690	592	534	469					
		5.5						1560	1475	1285	1225	950	815	735	645	560	465	370	330	
		7.5								1752	1670	1295	1111	1002	880	763	634	505	450	
		11										1630	1470	1290	1120	930	740	660		
WS82	六极	1.1	984	794	700															1752
		1.5	1342	1082	954	875	787	638	602	525										
		2.2		1588	1400	1284	1154	936	884	770	734	570								
四级 4-pole	输出转速 r/min Output speed	11	13	15	18	20	25	28	30	34	45	50	56	64	78	93	117	140		
六级 6-pole	输出转速 r/min Output speed	7	8.6	10	12	13	17	19	20	23	30	33	37	42	52	62	78	93		

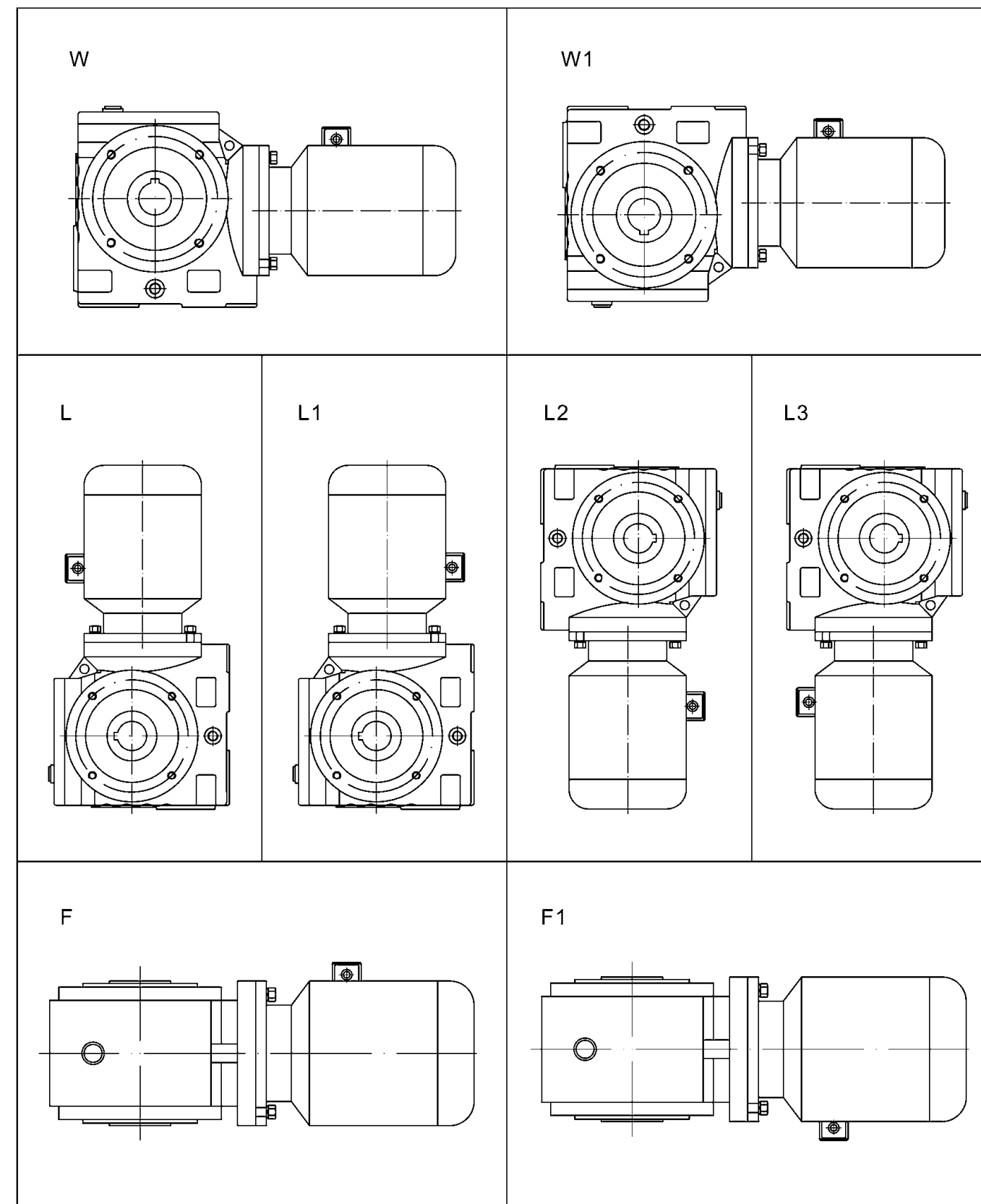
WS 系列外形及安装尺寸 | Overall & Installation Dimension of WS Series



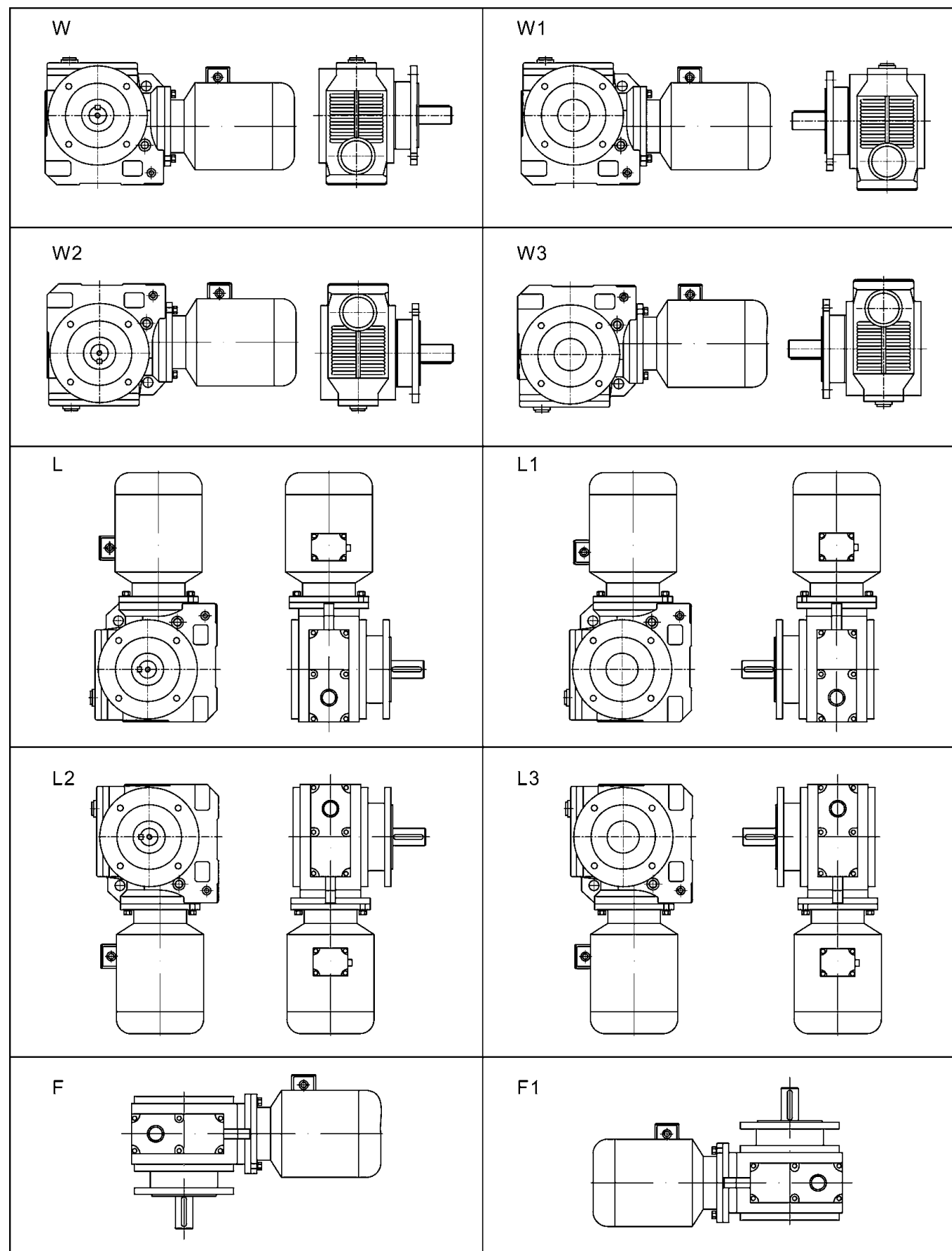
机座号 Housing No.	安装尺寸 (W) Installation dimension (W)							输出轴尺寸 Output shaft dimension							外形尺寸 Overall dimension								
	H ₀	A ₀	B ₀	A ₁	A ₂	B ₁	L ₀	n	d ₀	h	d	e	b	c	s	A	B	W	h ₁	h ₂	H ₁	L	L ₁
32	80	63	90	40	35	15	63	8	9	0	20js6	40	6	22.5	M6	89	108	100	10	10	143	143	
42	100	80	100	35	35	15	75	8	11	11	25js6	50	8	28	M8	120	120	115	15	12	166	171	
52	112	100	110	35	45	19	80	8	11	24	30js6	60	8	33	M10	130	136	134	15	12	189	187	
62	140	130	130	40	60	25	106	8	13.5	24	35js6	70	10	38	M12	175	160	160	20	15	236	241	
72	180	135	150	70	75	30	125	8	17.5	33	45js6	90	14	48.5	M16	204	185	195	25	25	301	287	
82	225	180	200	82	92	35	150	8	22	40	60k6	120	18	64	M20	247	250	255	30	30	368	340	
92	280	235	250	90	115	30	180	8	26	53	70k6	140	20	74.5	M20	320	300	295	35	35	455	420	

See the table for electronic PS
参考电机见表 P5

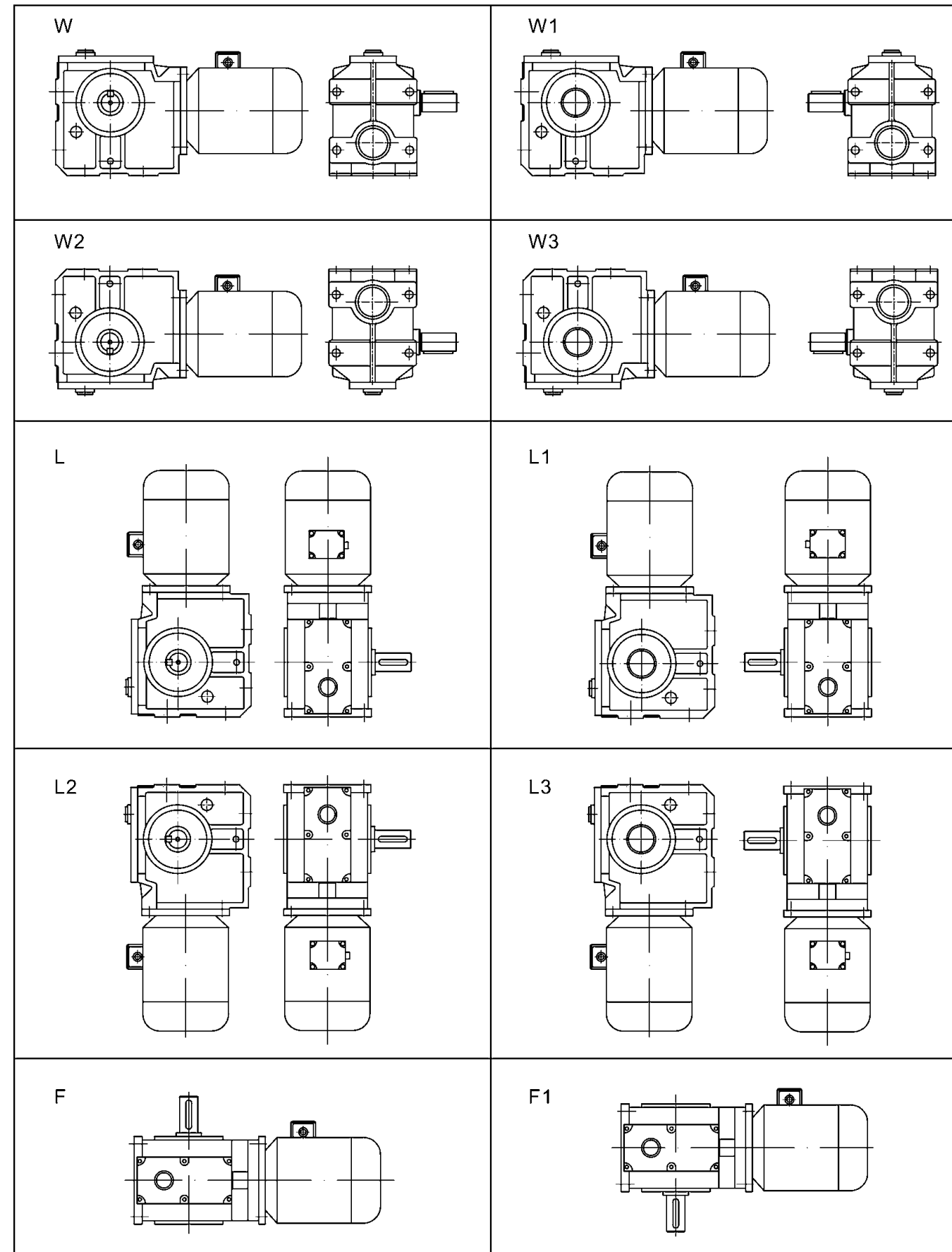
W/SE 系列安装形式 | Installation Type of W/SE Series



W/SF W/SK 系列安装形式 | Installation Type of W/SF W/SK Series



WS 系列安装形式 | Installation Type of WS Series



W/SF、W/SK、WS 系列润滑油量表

Lubricating Oil Capacity Sheet of W/SF, W/SK, WS Series

安装形式 Installation form	W	W1	W2	W3	L	L1	L2	L3	F	F1
机座号 Housing No.	润滑油量 (升) Lubricating Oil Capacity (L)									
32	0.25	0.25	0.5	0.5	0.6	0.6	0.4	0.4	0.4	0.4
42	0.35	0.35	0.7	0.7	1.1	1.1	0.8	0.8	0.5	0.5
52	0.5	0.5	1.0	1.0	1.5	1.5	1.2	1.2	1.3	1.3
62	1.0	1.0	2.2	2.2	3.2	3.2	2.0	2.0	2.6	2.6
72	1.9	1.9	3.7	3.7	6	6	4.2	4.2	4.4	4.4
82	3.3	3.3	6.9	6.9	12	12	8.1	8.1	8.4	8.4
92	7	7	13.4	13.4	22.5	22.5	15	15	17	17

W/SE 系列润滑油量表 | Lubricating Oil Capacity Sheet of W/SE Series

安装形式 Installation form	W	W1	L	L1	L2	L3	F	F1
机座号 Housing No.	润滑油量 (升) Lubricating Oil Capacity (L)							
32	0.25	0.25	0.6	0.6	0.4	0.4	0.4	0.4
42	0.4	0.4	1.1	1.1	0.8	0.8	0.6	0.6
52	0.5	0.5	1.5	1.5	1.2	1.2	1.3	1.3
62	1.0	1.0	2.9	2.9	2.0	2.0	2.6	2.6
72	1.8	1.8	5.9	5.9	3.9	3.9	4.4	4.4
82	3.8	3.8	11.2	11.2	7.4	7.4	8.2	8.2
92	7	7	21	21	14	14	16	16

W 系列变速器重量表 (不含电机) | Weight Table of W Series (Without Motor)

机座号 Housing No.	W32/SE	W42/SE	W52/SE	W62/SE	W72/SE	W82/SE	W92/SE
重量 Weight (kg)	11	18	22	30	49	88	153
机座号 Housing No.	W32/SF	W42/SF	W52/SF	W62/SF	W72/SF	W82/SF	W92/SF
重量 Weight (kg)	12	22	25	34	55	104	178
机座号 Housing No.	W32/SK	W42/SK	W52/SK	W62/SK	W72/SK	W82/SK	W92/SK
重量 Weight (kg)	13	21	26	35	59	111	188
机座号 Housing No.	WS32	WS42	WS52	WS62	WS72	WS82	WS92
重量 Weight (kg)	11	17	22	29	49	91	158