

Technical Information

Hydraulic System In Aerial Work Platform

AWP/2ABPF/2.8XPF/2ABDPF/GWD/GBD/GFA/GRC/GHP





RYAN HYDRAULICS

Keep the concept seeking excellence.
RYAN try our best to create more value for you with products and service.

RYAN Hydraulics

About RYAN

RYAN's manufacturing base was established in 1986, with quality hydraulic components and solutions to hydraulic system in the applications of engineering machinery, mobile industries, agricultural machinery, aviation, mining, and other fields. Main products include gear pump, gear motor, flow divider, orbital motor, loadsensing proportional valve, monoblock valve, sectional valve, manifold assembly and hydraulic power unit as well.

Long-term Development Strategy

Reducing emissions by new energy is one of RYAN's long-term strategies. RYAN will be providing innovative technologies, products, and services for the global development of new energy, moving towards a century development strategy, and writing a century-new chapter in the hydraulic field.



Innovation leads the future

Through a few decades of development, RYAN's manufacturing base has built an intelligent manufacturing factory, gathering international R&D talents, accumulating rich R&D and manufacturing experience, possessing independent intellectual property rights, continuously providing customers with new products and technologies, and creating value for all of the customers.



Hydraulic System In Aerial Work Platform

	04-16	L Power Packs
Gear Pumps L	17-22	
	23-33	L Orbital Motors
Brakes L	34-35	
	36	L Hand Pumps

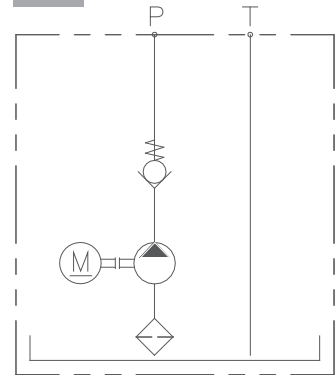


Aerial Working Platform Power Pack 1

Introduction

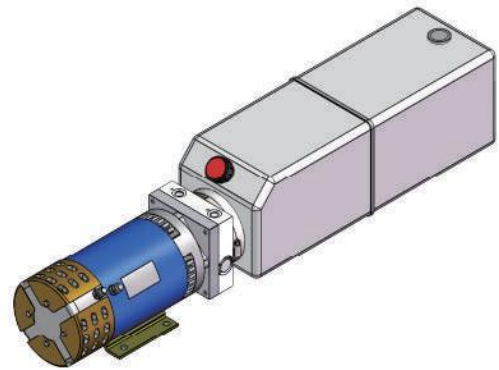
1. High-pressure gear oil pump / DC motor / Extended tank
2. Anti-reverse check valve

F01

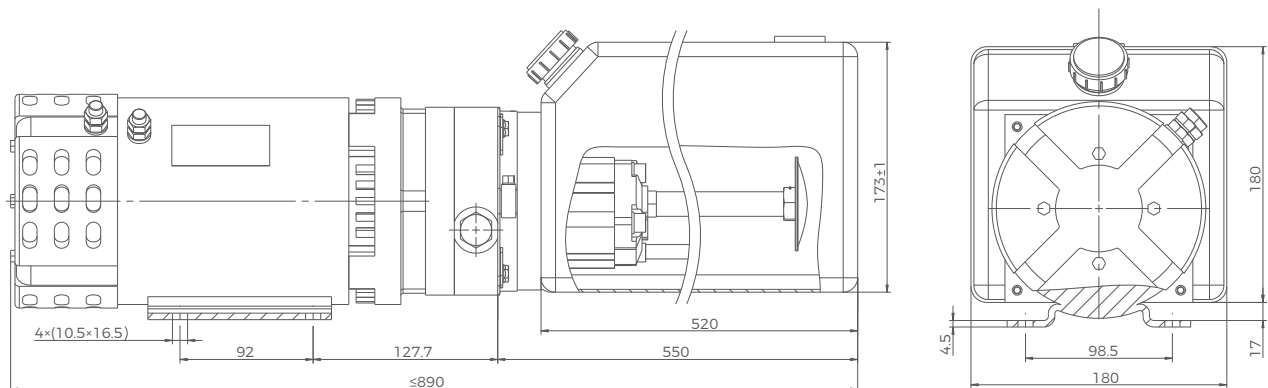


Technical Data

Model	DC-F01-4.8/F-4.5/48-15PV-C
Voltage	DC48V
Power	4.5kW
Speed	2500rpm
Dis.	4.8cc/r
Pressure	21MPa
Volume	15L
Port Size	P, T: G1/4



Drawing





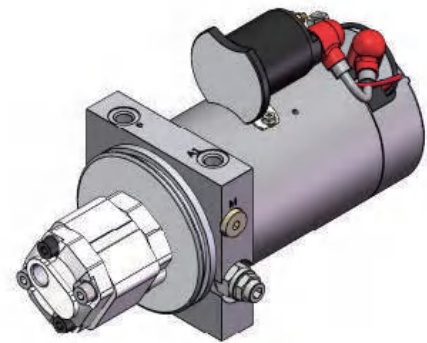
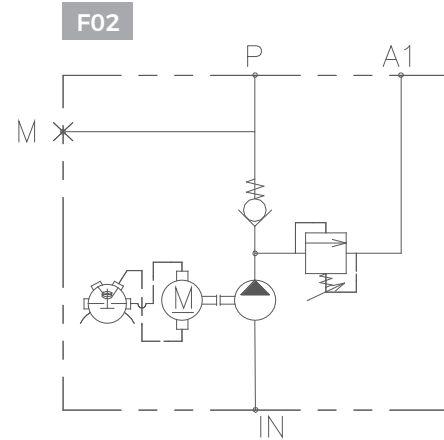
Aerial Working Platform Power Pack 2

Introduction

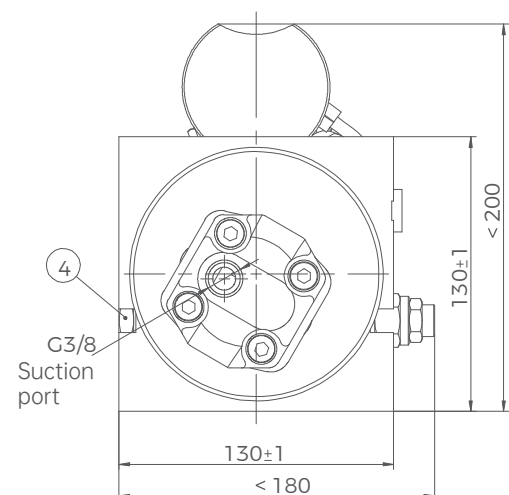
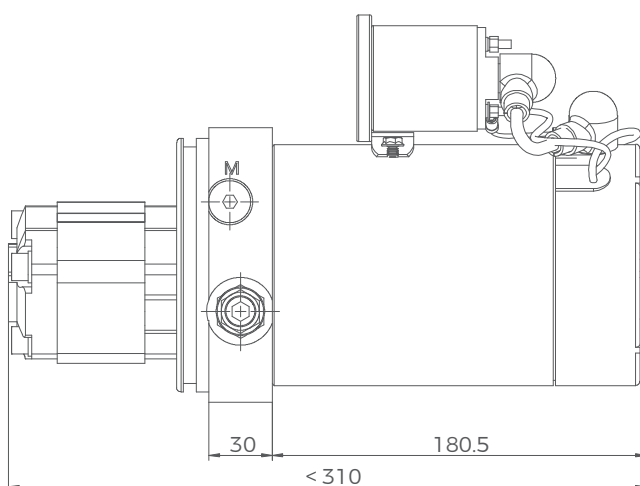
1. High pressure gear oil pump / DC motor / No tank
2. Pressure limiting relief valve

Technical Data

Model	DC-F02-2.1/F-2.2/12-C
Voltage	DC12V
Power	2.2kW
Speed	2600rpm
Dis.	2.1cc/r
Pressure	21MPa
Volume	Not Applicable
Port Size	P, A1, M: G1/4; P: G3/8



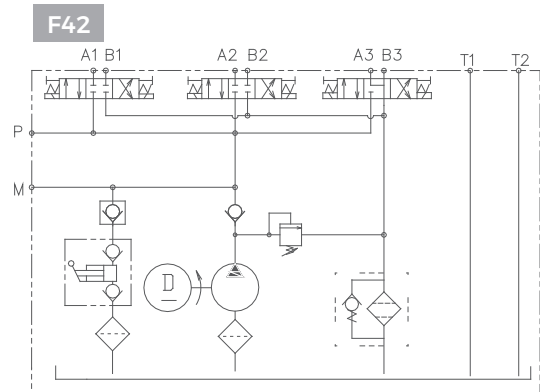
Drawing



Aerial Working Platform Power Pack 3

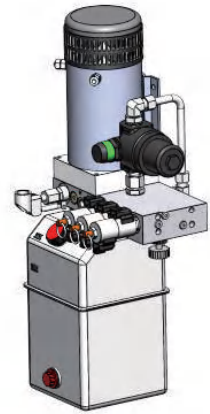
Introduction

1. High pressure gear oil pump / DC motor / Double acting
2. Emergency manual pump
3. External oil return filter

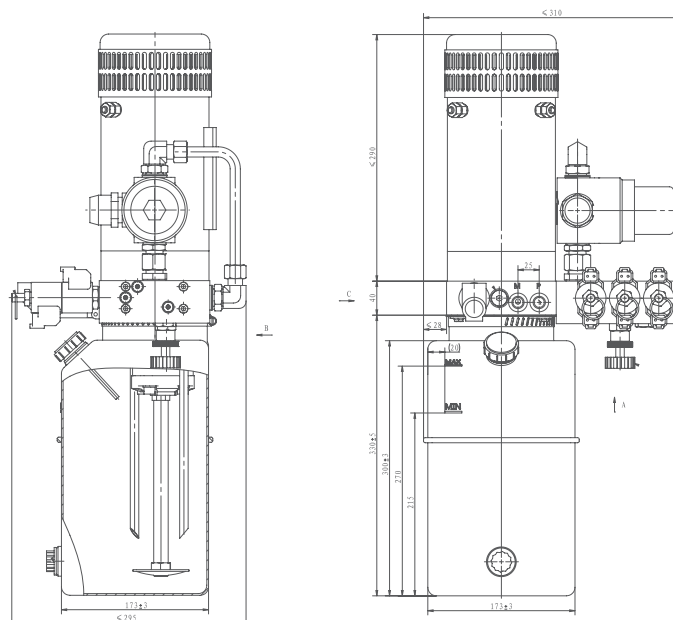


Technical Data

Model	DC-F42-3.7/E-4/24/24-8PV-C
Voltage	DC24V
Power	4kW
Speed	2700rpm
Dis.	3.7cc/r
Pressure	21MPa
Volume	8L
Port Size	P, T, A, B, M: G1/4



Drawing

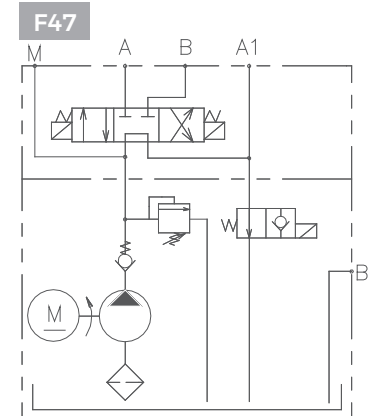




Aerial Working Platform Power Pack 4

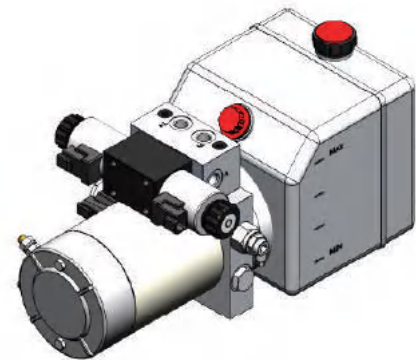
Introduction

1. High pressure gear oil pump / DC motor / Double acting
2. Plastic oil tank

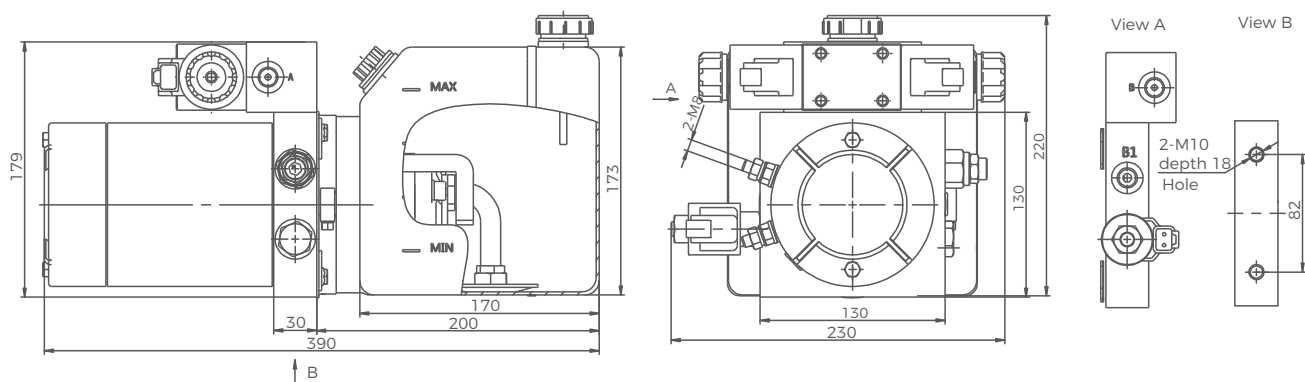


Technical Data

Model	DC-F47-1.1/E-1.6/24/20-4PH-C-G
Voltage	DC24V
Power	1.6kW
Speed	2900rpm
Dis.	1.1cc/r
Pressure	14MPa
Volume	4L
Port Size	A, B, A1, B1, M: G1/4



Drawing



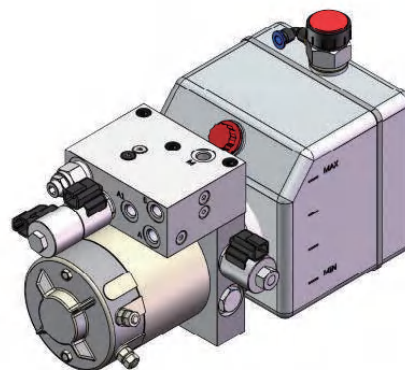
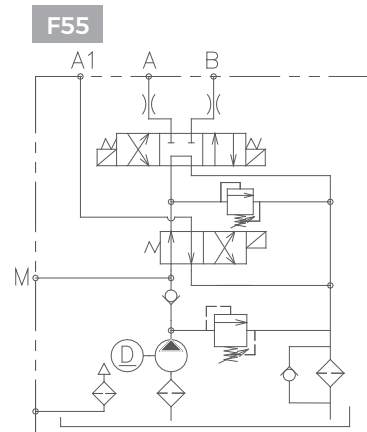
Aerial Working Platform Power Pack 5

Introduction

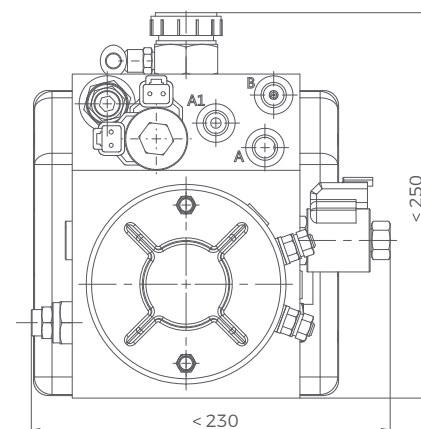
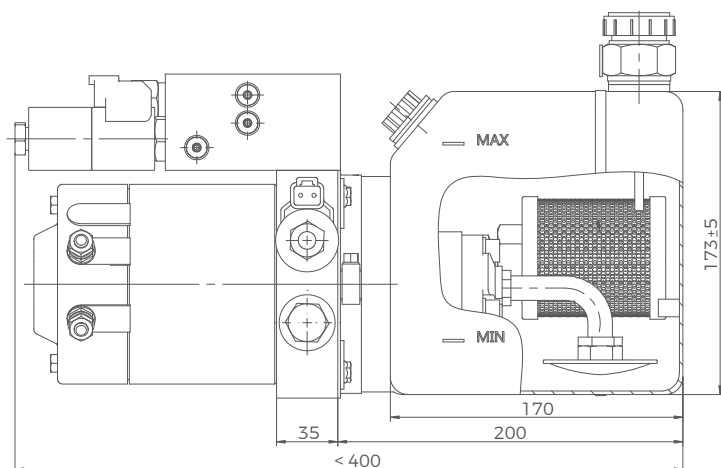
1. High-pressure gear oil pump / DC motor / Double acting
2. Internal filter element

Technical Data

Model	DC-F55-1.6/E-1.2/24/20-4PH-C
Voltage	DC24V
Power	1.2kW
Speed	3800~4400rpm
Dis.	1.6cc/r
Pressure	15.5MPa
Volume	4L
Port Size	A, B, A1, M: G1/4



Drawing



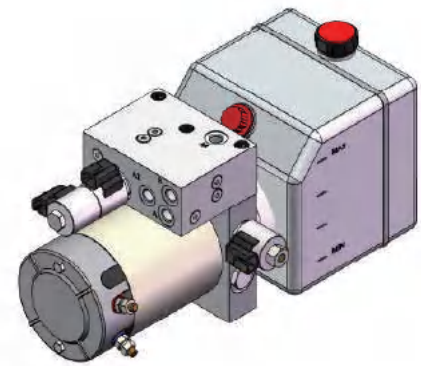
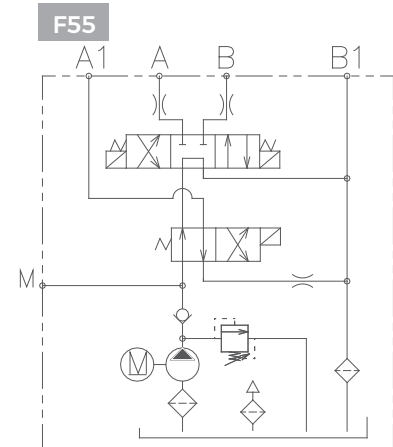
Aerial Working Platform Power Pack 6

Introduction

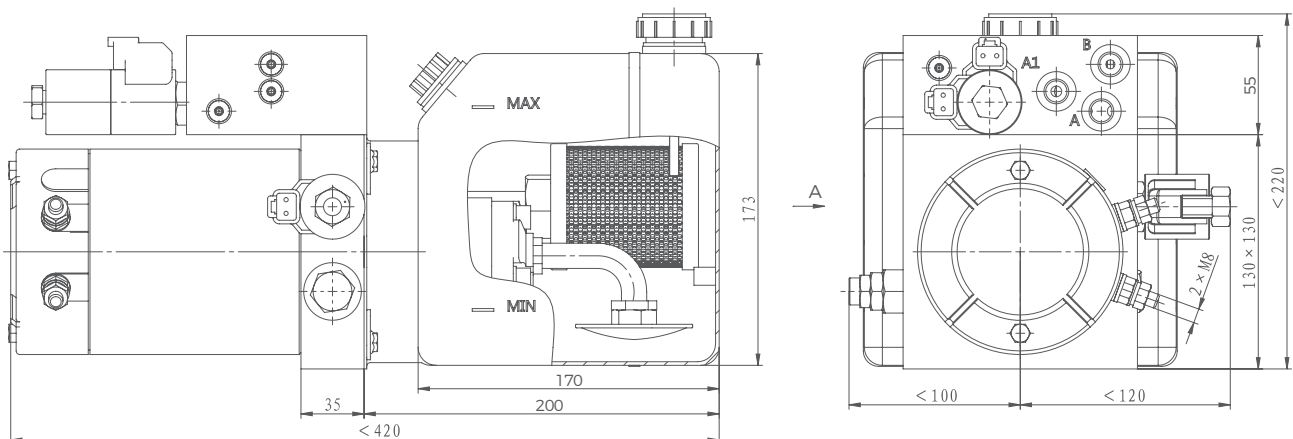
1. High-pressure gear oil pump / DC motor / Double acting
2. Internal filter element

Technical Data

Model	DC-F55-2.1/E-2.2/24/20-4PH-C
Voltage	DC24V
Power	2.2kW
Speed	2500~2900rpm
Dis.	2.1 cc/r
Pressure	19MPa
Volume	4L
Port Size	A, B, A1, M, B1: G1/4



Drawing



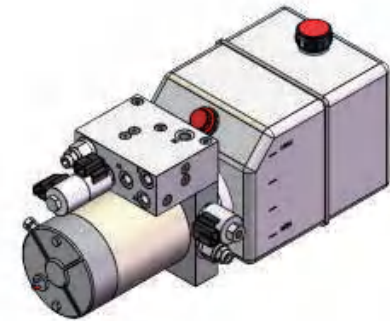
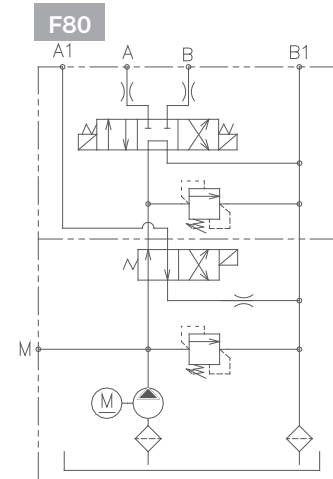
Aerial Working Platform Power Pack 7

Introduction

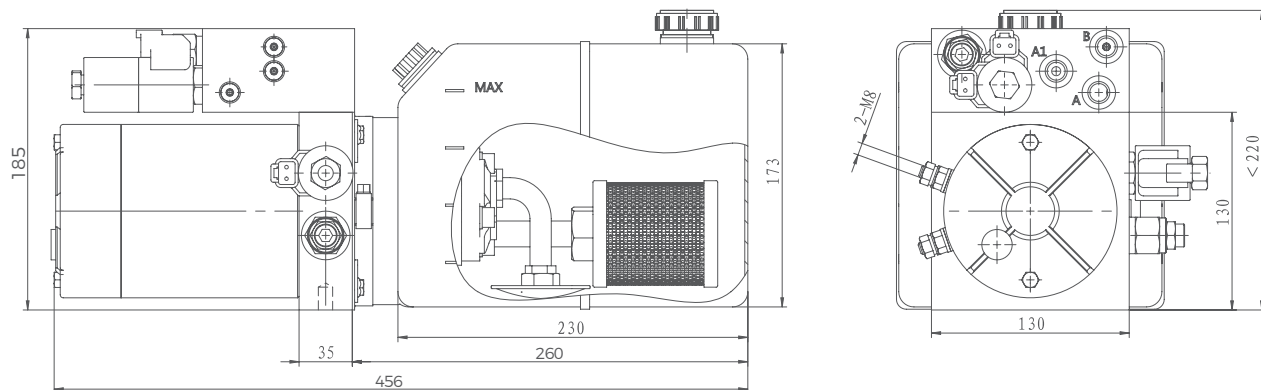
1. High-pressure gear oil pump / DC motor / Double acting
2. Internal filter element

Technical Data

Model	DC-F80-2.5/F-2.2/24/20-6PH-C1
Voltage	DC24V
Power	2.2kW
Speed	2600rpm
Dis.	2.5cc/r
Pressure	21MPa
Volume	6L
Port Size	A, B, A1, B1, M: G1/4



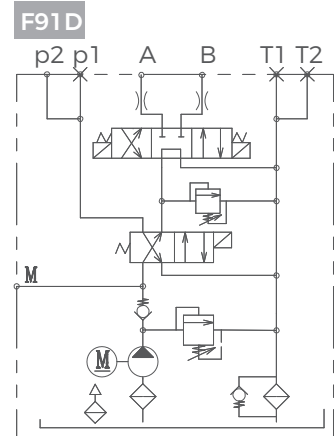
Drawing



Aerial Working Platform Power Pack 8

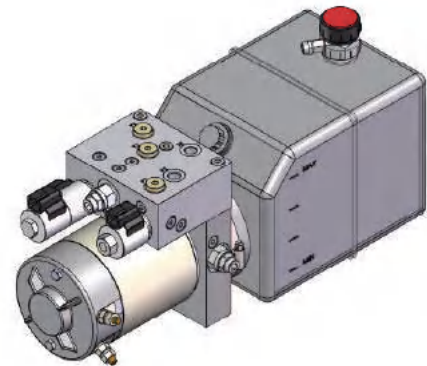
Introduction

1. High-pressure gear oil pump / DC motor / Double acting
2. Internal filter element
3. Multiple oil return ports

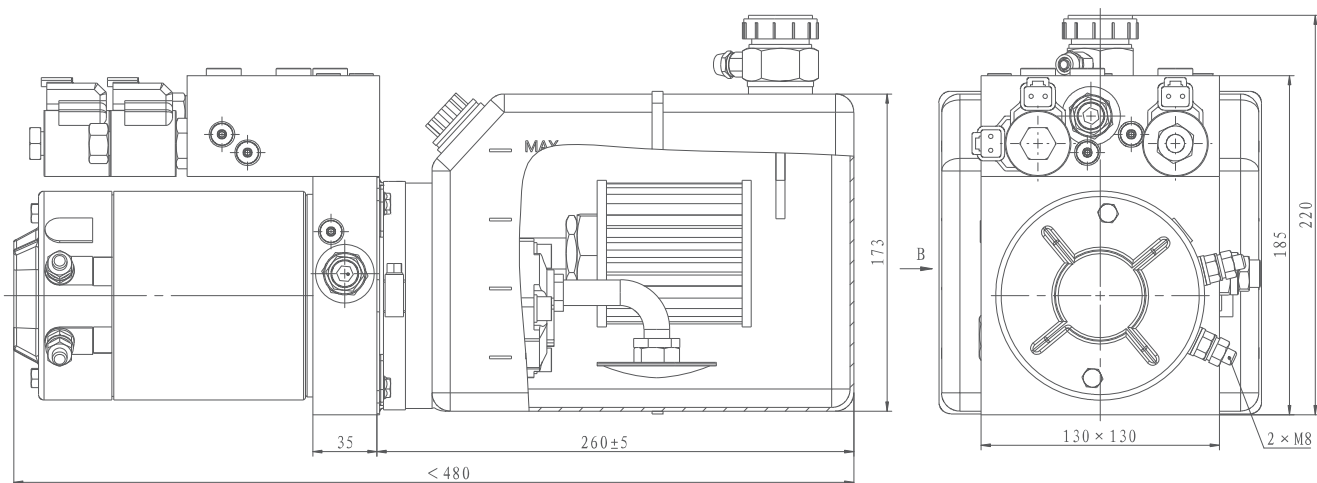


Technical Data

Model	DC-F91D-3.2/E-2.2/24/20-6PH-C
Voltage	DC24V
Power	2.2kW
Speed	2750rpm
Dis.	3.2cc/r
Pressure	15MPa
Volume	6L
Port Size	A, B, P1, P2, T1, T2, M: G1/4



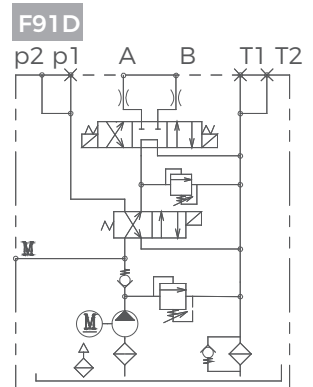
Drawing



Aerial Working Platform Power Pack 9

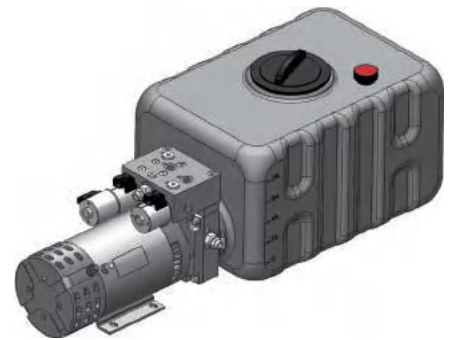
Introduction

1. High-pressure gear oil pump / DC motor / Double acting
2. Internal filter element
3. Large capacity oil tank with large opening cap.

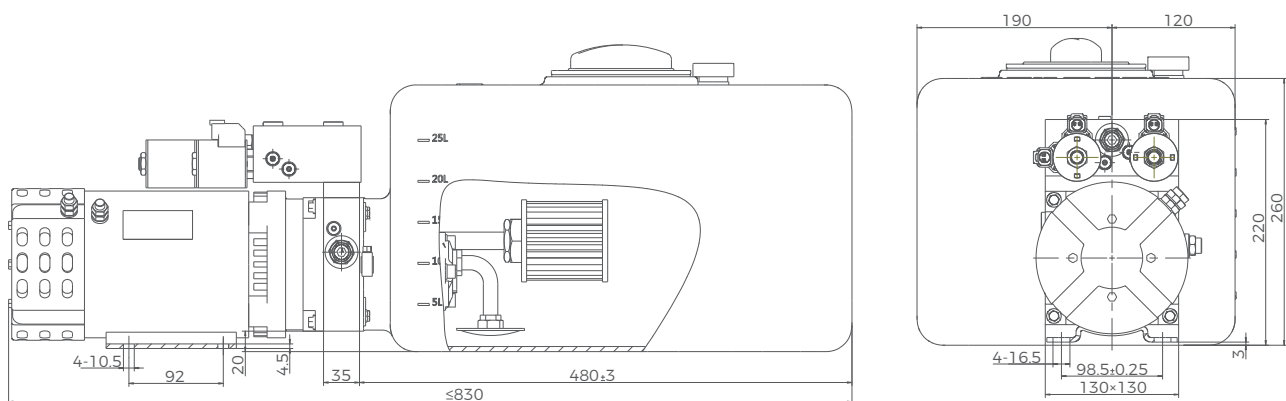


Technical Data

Model	DC-F91D-4.8/E-4.5/48/24-28PH-C
Voltage	DC48V
Power	4.5kW
Speed	2750rpm
Dis.	4.8cc/r
Pressure	15MPa
Volume	28L
Port Size	A, B, P1, P2, T1, T2, M: G1/4



Drawing

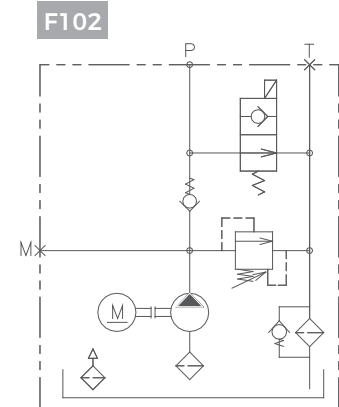




Aerial Working Platform Power Pack 10

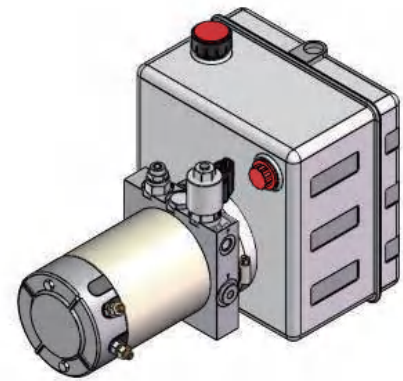
Introduction

1. High-pressure gear oil pump / DC motor / Single acting
2. Internal filter element

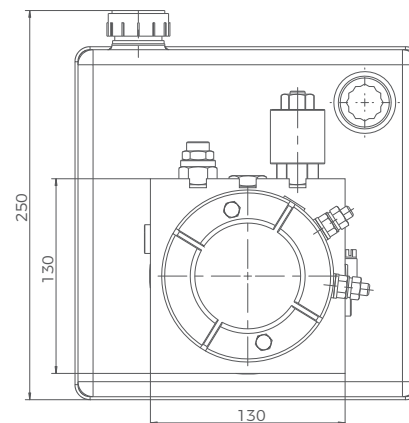
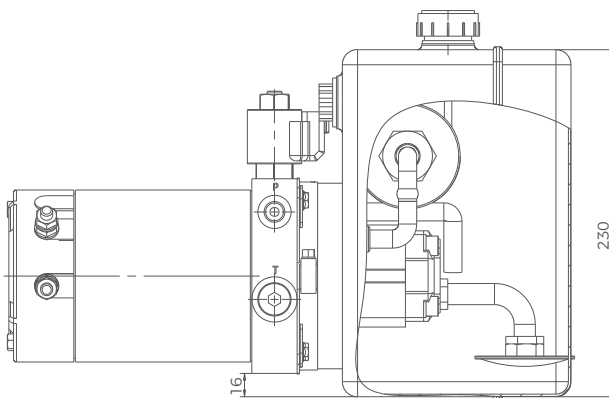


Technical Data

Model	DC-F102-3.2/F-2.2/24/24-7PBH-C
Voltage	DC24V
Power	2.2kW
Speed	2750rpm
Dis.	3.2cc/r
Pressure	18MPa
Volume	7L
Port Size	P, M: G1/4; T: G3/8



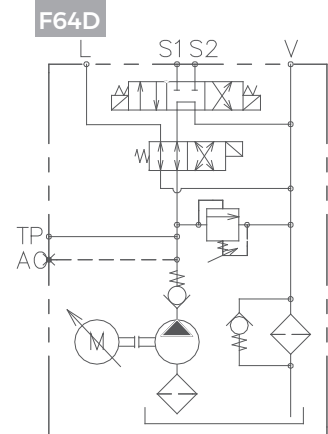
Drawing



Aerial Working Platform Power Pack 11

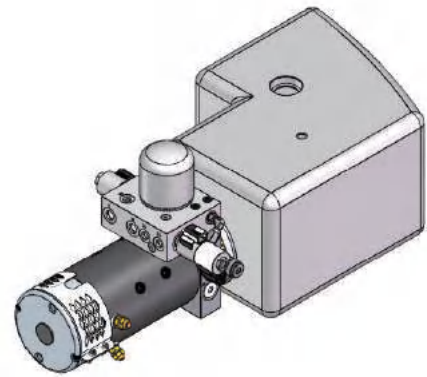
Introduction

1. High-pressure gear oil pump / DC motor / Double acting
2. External oil return filter

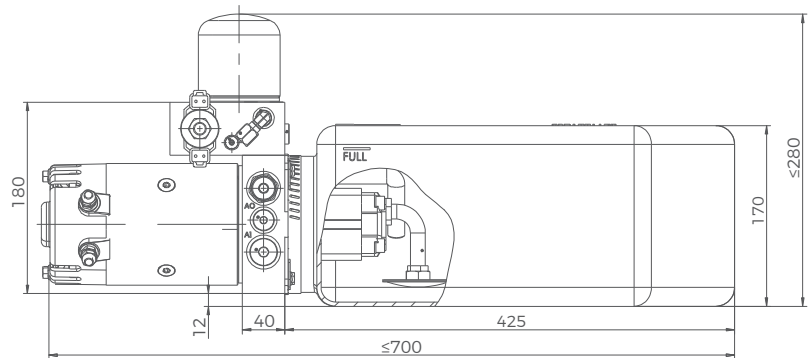
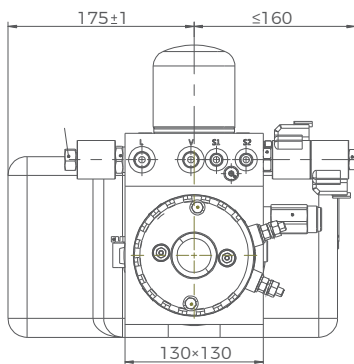


Technical Data

Model	DC-F64D-2.9/F-2.4/24/20-13PH-FK
Voltage	DC24V
Power	2.4KW
Speed	2700rpm
Dis.	2.9cc/r
Pressure	21Mpa
Volume	13L
Port Size	S1, S2, T, P: SAE4; L,V: SAE6



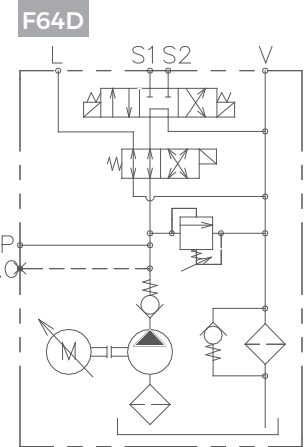
Drawing



Aerial Working Platform Power Pack 12

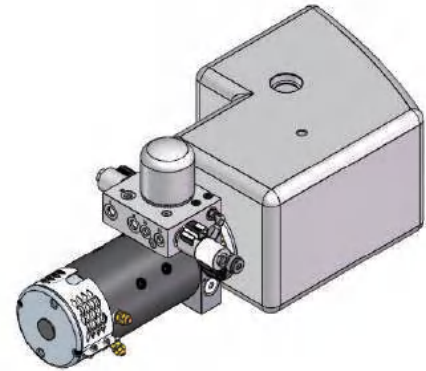
Introduction

1. High-pressure gear oil pump / DC motor / Double acting
2. Internal filter element
3. Shaped oil tank

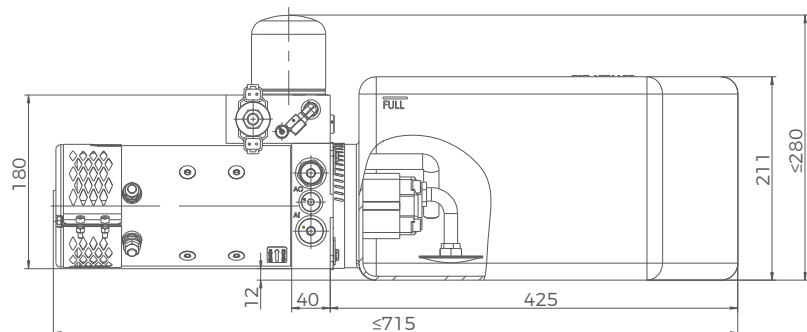
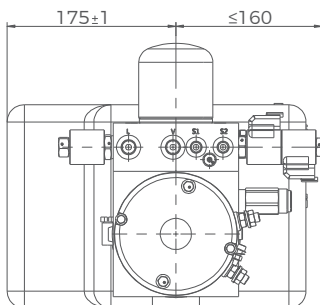


Technical Data

Model	DC-F64D-3.8/F-2.8/24/20-22PH-FK
Voltage	DC24V
Power	2.8kW
Speed	2700rpm
Dis.	3.8cc/r
Pressure	21 MPa
Volume	21.6L
Port Size	S1, S2, T, P: SAE4; L, V: SAE6



Drawing



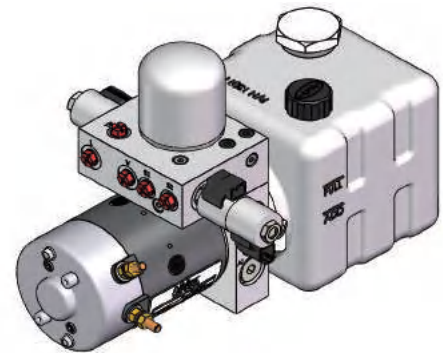
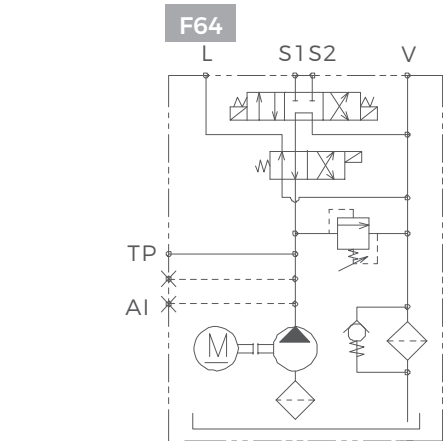
Aerial Working Platform Power Pack 13

Introduction

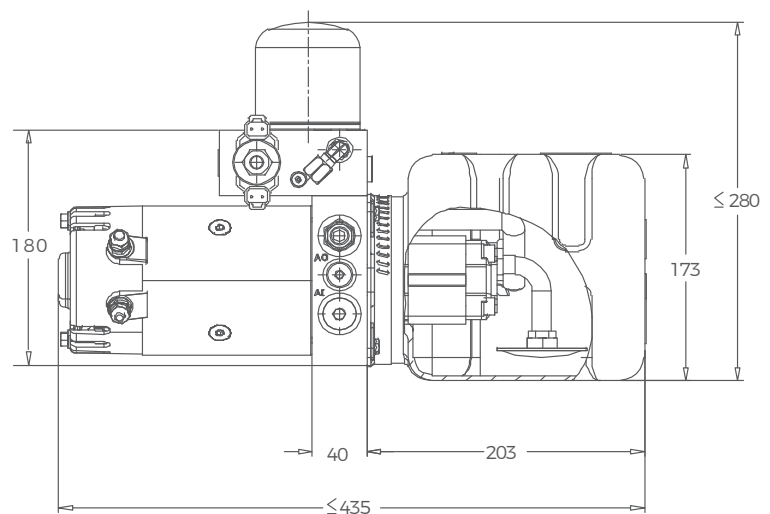
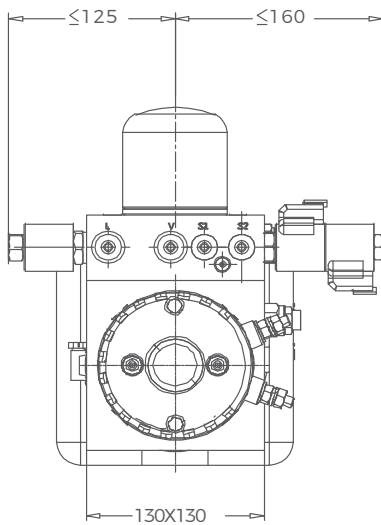
1. High pressure gear oil pump / DC motor / Multipurpose integrated valve block / Hydraulic valve / Tank
2. 3-position 4-way solenoid valve / 2-position 4-way solenoid valve
3. External oil return filter

Technical Data

Model	DC-F64-1.5/F-2.0-24/20-4PH-FK
Voltage	DC24V
Power	2.0kW
Speed	3100rpm
Dis.	1.5cc/r
Pressure	24.5MPa
Volume	4L
SiPort Sizeze	SAE4, SAE6

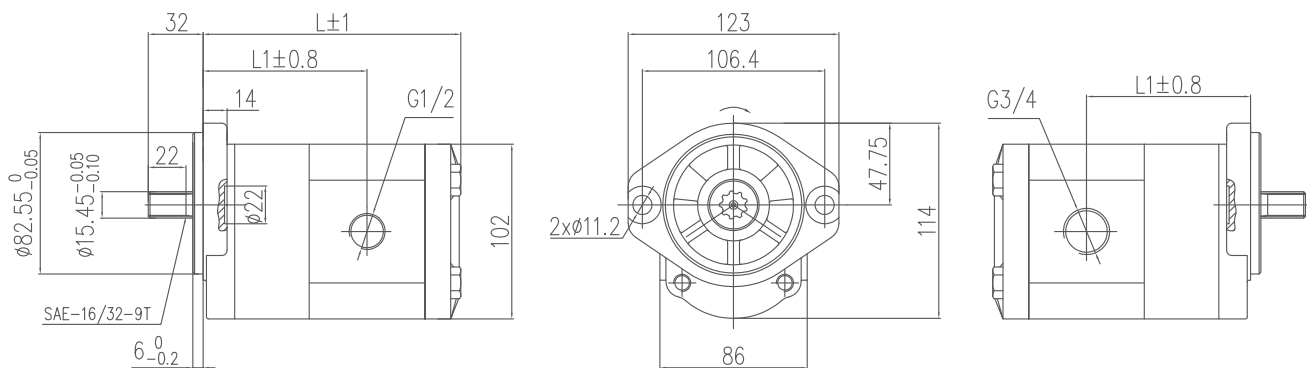


Drawing




2ABPFL**S013D10-TLT-O**


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L1 (mm)	L (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2ABPF04L08S013D10-TLT-O	4	200(250)	230(280)	250(300)	2000	3500	500	87.4	133.8	G3/4	G1/2
2ABPF06L08S013D10-TLT-O	6	200(250)	230(280)	250(300)	2000	3500	500	89.3	137.5		
2ABPF08L08S013D10-TLT-O	8	200(250)	230(280)	250(300)	2000	3500	500	90.8	140.5		
2ABPF10L08S013D10-TLT-O	10	200(250)	230(280)	250(300)	2000	3500	500	92.5	144.0		
2ABPF12L08S013D10-TLT-O	12	200(250)	230(280)	250(300)	2000	3500	500	94.3	147.5		
2ABPF14L08S013D10-TLT-O	14	200(250)	230(280)	250(300)	2000	3500	500	95.8	150.5		
2ABPF16L08S013D10-TLT-O	16	200(250)	230(280)	250(300)	2000	3500	500	97.5	154.0		
2ABPF18L08S013D10-TLT-O	18	200(250)	230(280)	250(300)	2000	3500	500	99.3	157.5		
2ABPF20L08S013D10-TLT-O	20	200(250)	230(280)	250(300)	2000	3500	500	101.0	161.0		
2ABPF23L08S013D10-TLT-O	23	200(250)	230(280)	250(300)	2000	3000	500	103.3	165.5		
2ABPF25L08S013D10-TLT-O	25	160(180)	180(200)	200(230)	2000	3000	500	105.0	169.0		
2ABPF28L08S013D10-TLT-O	28	160(180)	180(200)	200(230)	2000	3000	500	107.5	174.0		
2ABPF30L08S013D10-TLT-O	30	160(180)	180(200)	200(230)	2000	3000	500	109.0	177.0		

Dimensions
2ABPFL08S013D10-TLT-O**
-TLT is special rear cover structure




2ABPFL**S013D10-TLT**

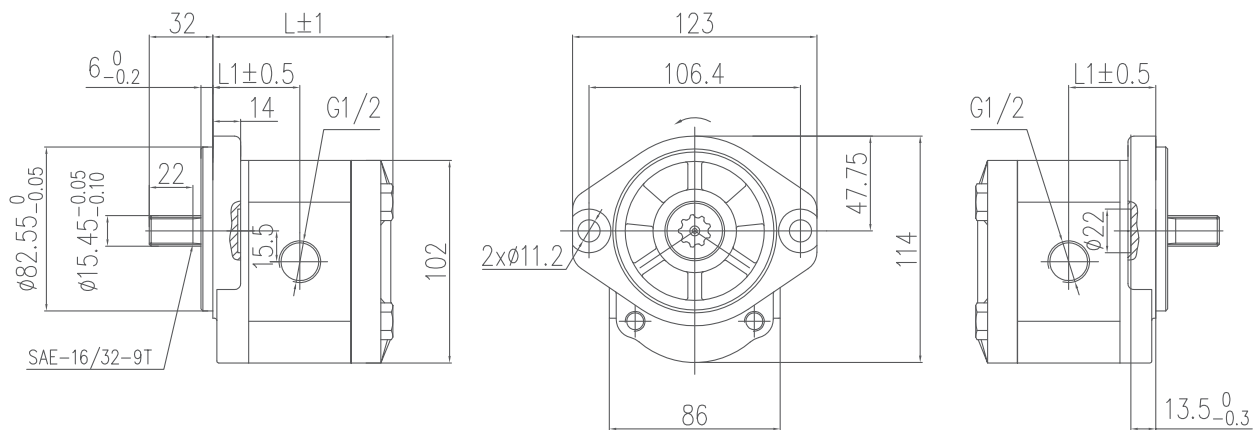


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L1 (mm)	L (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2ABPF04L04S013D10-TLT	4	200	230	250	2000	3500	500	43.4	89.8	G1/2	G1/2
2ABPF4.5L04S013D10-TLT	4.5	200	230	250	2000	3500	500	43.8	90.6		
2ABPF06L04S013D10-TLT	6	200	230	250	2000	3500	500	45.3	93.5		
2ABPF08L04S013D10-TLT	8	200	230	250	2000	3500	500	46.8	96.5		
2ABPF10L04S013D10-TLT	10	200	230	250	2000	3500	500	48.5	100.0		
2ABPF12L04S013D10-TLT	12	200	230	250	2000	3500	500	50.3	103.5		
2ABPF14L04S013D10-TLT	14	200	230	250	2000	3500	500	51.8	106.5		
2ABPF16L04S013D10-TLT	16	200	230	250	2000	3500	500	53.5	110.0		
2ABPF18L04S013D10-TLT	18	200	230	250	2000	3500	500	55.3	113.5		
2ABPF20L04S013D10-TLT	20	200	230	250	2000	3500	500	57.0	117.0		
2ABPF23L04S013D10-TLT	23	200	230	250	2000	3000	500	59.3	121.5		
2ABPF25L04S013D10-TLT	25	160	180	200	2000	3000	500	61.0	125.0		
2ABPF28L04S013D10-TLT	28	160	180	200	2000	3000	500	63.5	130.0		
2ABPF30L04S013D10-TLT	30	160	180	200	2000	3000	500	65.0	133.0		

Dimensions

2ABPFL04S013D10L-TLT**

-TLT is special rear cover structure

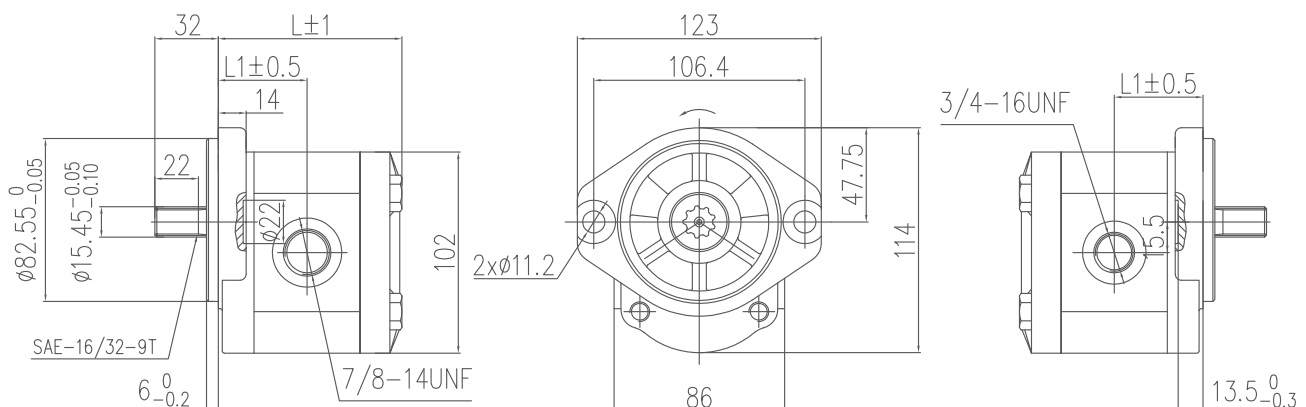



2ABPFLJ**S013D10L-TLT-D**


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L1 (mm)	L (mm)	Inlet	Outlet
		Rated	Max.	Min.	Rated	Max.	Min.				
2ABPF04LJ37S013D10L-TLT-D	4.0	200(250)	230(280)	250(300)	2000	3500	500	43.4	89.8	7/8-14UNF	3/4-16UNF
2ABPF5.6LJ37S013D10L-TLT-D	5.6	200(250)	230(280)	250(300)	2000	3500	500	44.8	92.5		
2ABPF06LJ37S013D10L-TLT-D	6.0	200(250)	230(280)	250(300)	2000	3500	500	45.3	93.5		
2ABPF08LJ37S013D10L-TLT-D	8.0	200(250)	230(280)	250(300)	2000	3500	500	46.8	96.5		
2ABPF10LJ37S013D10L-TLT-D	10.0	200(250)	230(280)	250(300)	2000	3500	500	48.5	100.0		
2ABPF12LJ37S013D10L-TLT-D	12.0	200(250)	230(280)	250(300)	2000	3500	500	50.3	103.5		
2ABPF14LJ37S013D10L-TLT-D	14.0	200(250)	230(280)	250(300)	2000	3500	500	51.8	106.5		
2ABPF16LJ37S013D10L-TLT-D	16.0	200(250)	230(280)	250(300)	2000	3500	500	53.5	110.0		
2ABPF18LJ37S013D10L-TLT-D	18.0	200(250)	230(280)	250(300)	2000	3500	500	55.3	113.5		
2ABPF20LJ37S013D10L-TLT-D	20.0	200(250)	230(280)	250(300)	2000	3500	500	57.0	117.0		
2ABPF23LJ37S013D10L-TLT-D	23.0	200(250)	230(280)	250(300)	2000	3000	500	59.3	121.5		
2ABPF25LJ37S013D10L-TLT-D	25.0	160(180)	180(200)	200(230)	2000	3000	500	61.0	125.0		
2ABPF28LJ37S013D10L-TLT-D	28.0	160(180)	180(200)	200(230)	2000	3000	500	63.5	130.0		
2ABPF30LJ37S013D10L-TLT-D	30.0	160(180)	180(200)	200(230)	2000	3000	500	65.0	133.0		

Dimensions
2ABPFLJ37S013D10L -TLT-D**

-TLT is special rear cover structure
 -D is galvanized surface of front and rear cover cast iron parts





2ABPFLJ**S011D09-W-D-TLT**

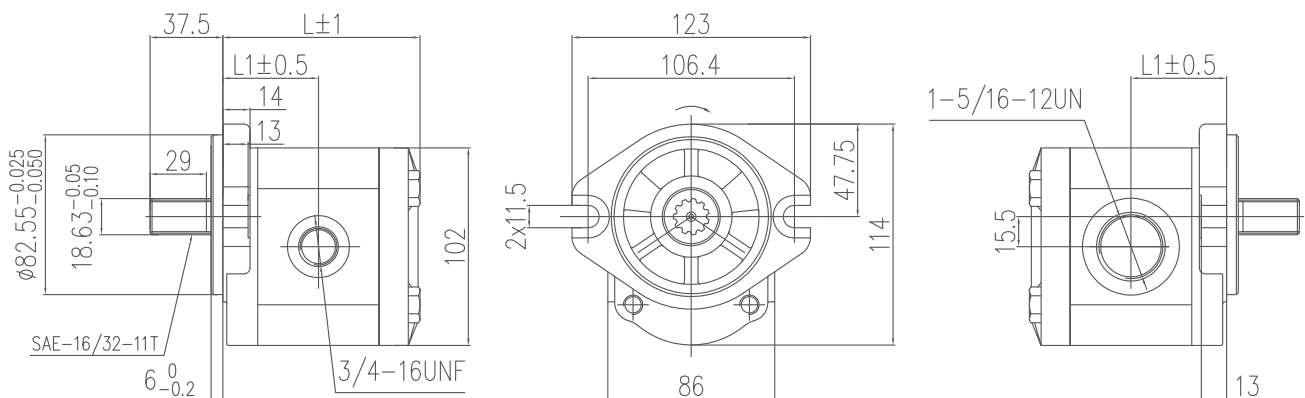


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L1 (mm)	L (mm)	Inlet	Outlet
		Rated	Max.	Min.	Rated	Max.	Min.				
2ABPF04LJ90S46D9-W-D-TLT	4	200(250)	230(280)	250(300)	2000	3500	500	43.4	89.8	1-5/16-12UN	3/4-16UNF
2ABPF06LJ90S46D9-W-D-TLT	6	200(250)	230(280)	250(300)	2000	3500	500	45.3	93.5		
2ABPF08LJ90S46D9-W-D-TLT	8	200(250)	230(280)	250(300)	2000	3500	500	46.8	96.5		
2ABPF10LJ90S46D9-W-D-TLT	10	200(250)	230(280)	250(300)	2000	3500	500	48.5	100.0		
2ABPF11LJ90S46D9-W-D-TLT	11	200(250)	230(280)	250(300)	2000	3500	500	49.4	101.7		
2ABPF12LJ90S46D9-W-D-TLT	12	200(250)	230(280)	250(300)	2000	3500	500	50.3	103.5		
2ABPF14LJ90S46D9-W-D-TLT	14	200(250)	230(280)	250(300)	2000	3500	500	51.8	106.5		
2ABPF16LJ90S46D9-W-D-TLT	16	200(250)	230(280)	250(300)	2000	3500	500	53.5	110.0		
2ABPF18LJ90S46D9-W-D-TLT	18	200(250)	230(280)	250(300)	2000	3500	500	55.3	113.5		
2ABPF20LJ90S46D9-W-D-TLT	20	200(250)	230(280)	250(300)	2000	3500	500	57.0	117.0		
2ABPF23LJ90S46D9-W-D-TLT	23	200(250)	230(280)	250(300)	2000	3000	500	59.3	121.5		
2ABPF25LJ90S46D9-W-D-TLT	25	160(180)	180(200)	200(230)	2000	3000	500	61.0	125.0		
2ABPF28LJ90S46D9-W-D-TLT	28	160(180)	180(200)	200(230)	2000	3000	500	63.5	130.0		
2ABPF30LJ90S46D9-W-D-TLT	30	160(180)	180(200)	200(230)	2000	3000	500	65.0	133.0		

Dimensions

2ABPFLJ3S011D09-W-D-TLT**

-TLT is special rear cover structure
-D is galvanized surface of front and rear cover cast iron parts



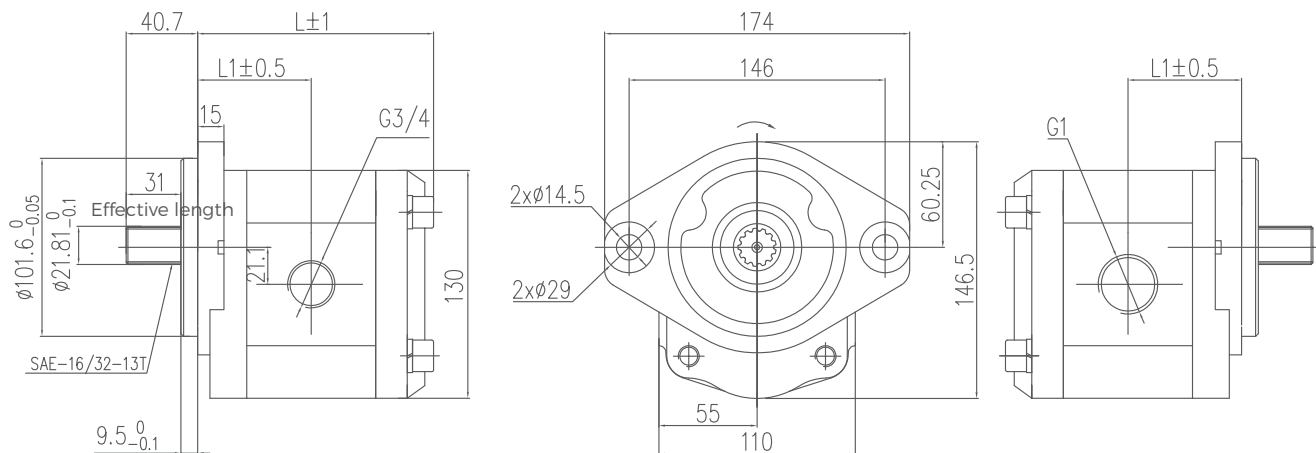
2.8XPF**L**S015D22



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L1 (mm)	L (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2.8XPF11L03S015D22	11	200(250)	230(280)	250(300)	2000	3000	500	60.8	126.6	G1	G3/4
2.8XPF12L03S015D22	12	200(250)	230(280)	250(300)	2000	3000	500	61.3	127.6		
2.8XPF15L03S015D22	15	200(250)	230(280)	250(300)	2000	3000	500	62.8	130.5		
2.8XPF16L03S015D22	16	200(250)	230(280)	250(300)	2000	3000	500	63.3	131.6		
2.8XPF19L03S015D22	19	200(250)	230(280)	250(300)	2000	3000	500	64.8	134.6		
2.8XPF23L03S015D22	23	200(250)	230(280)	250(300)	2000	3000	500	66.9	138.8		
2.8XPF25L03S015D22	25	200(250)	230(280)	250(300)	2000	3000	500	67.9	140.8		
2.8XPF28L03S015D22	28	200(250)	230(280)	250(300)	2000	3000	500	69.5	143.9		
2.8XPF34L03S015D22	34	200(250)	230(280)	250(300)	2000	3000	500	72.6	150.1		
2.8XPF38L03S015D22	38	200(250)	230(280)	250(300)	2000	3000	500	74.6	154.1		
2.8XPF40L03S015D22	40	200(250)	230(280)	250(300)	2000	3000	500	75.6	156.1		

Dimension

2.8XPF**L03S015D22



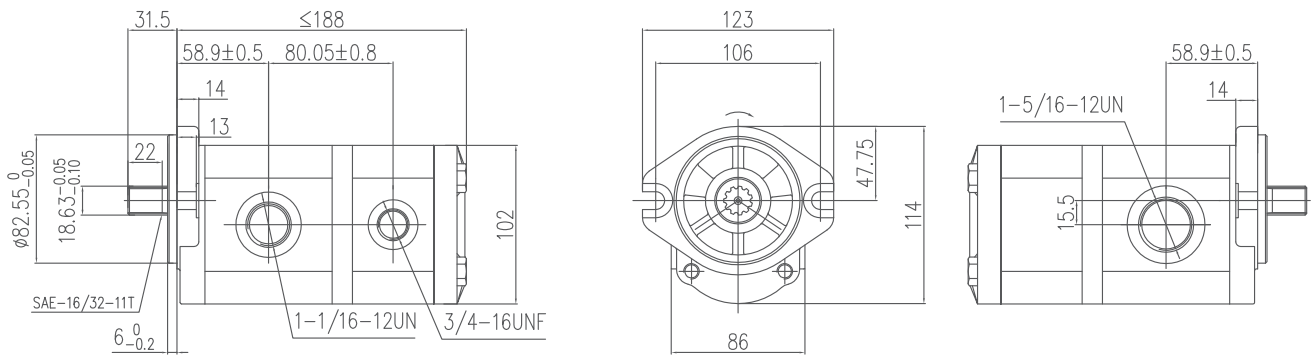


2ABDPF23/5DLJ40S024D38-T-W-D-TLT



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
2ABDPF23/5DLJ40S341-T-W-D-TLT	23/5	200(250)	230(280)	250(300)	2000	3000	800	1-5/16-12UN	1-1/16-12UN 3/4-16UNF

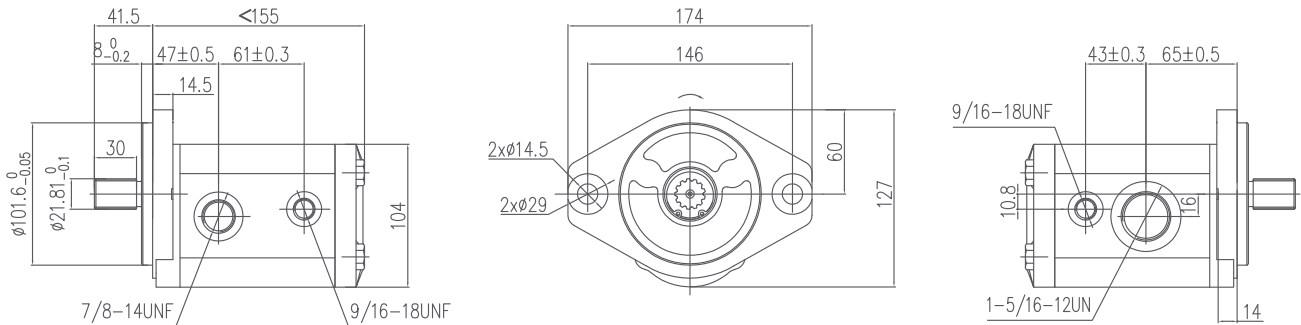
Dimensions



2/1ASDPG6.5/3.2DLJ113S025D39-D

Model	Displacement (ml/r)	Pressure(bar)		Speed(r/min)			Inlet	Outlet
		Rated	Max.	Rated	Max.	Min.		
2/1ASDPG6.5/3.2DLJ113S025D39-D	6.5/3.2	200	250	2000	3500	800	1-5/16-12UN 9/16-18UNF	7/8-14UNF 9/16-18UNF

Dimensions





GWD Series Hydraulic Motors

Options

- Rotor flow distribution, geroler type
- Geroler type
- Motor with needle bearing
- Align the ports on the side
- Straight, splined and tapered shafts
- High pressure seal
- Metric, SAE and BSPP ports

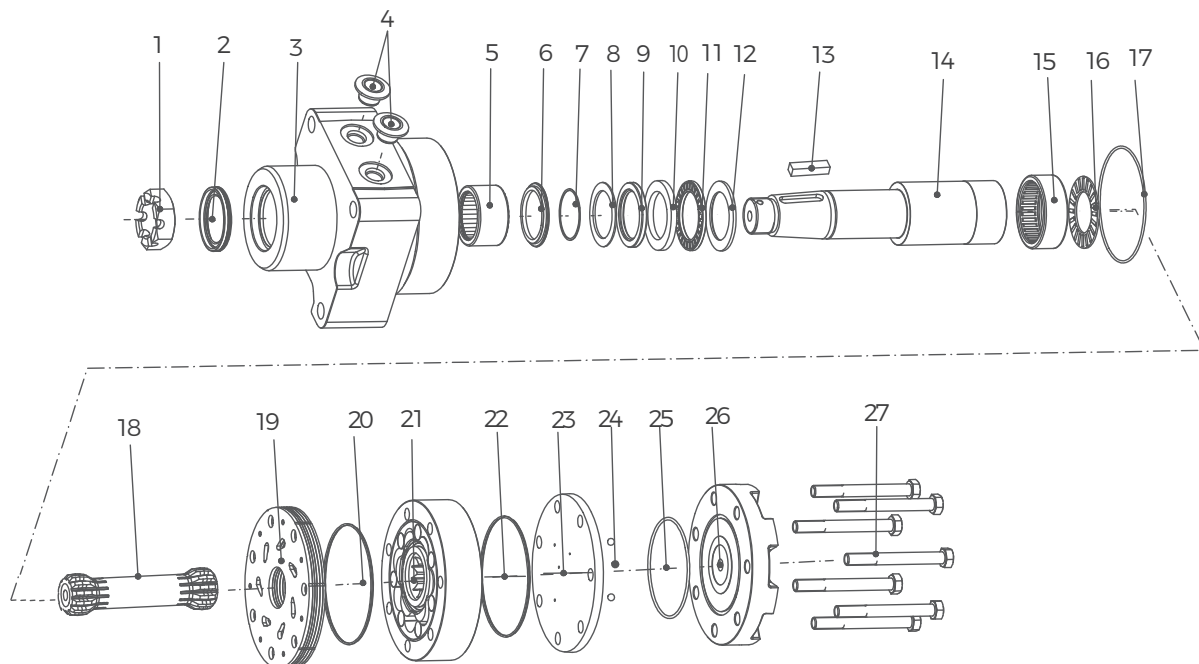
Applications

- Aerial work platform
- Material handling and lifting machines
- Agricultural machines
- Marine machines
- Road machines
- Garden machines
- Lawn and turf machines



General


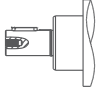

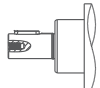
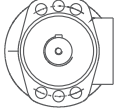
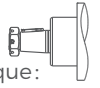

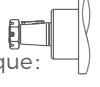

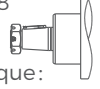



Max. Displacement	cm ³ /rev [in ³ /rev]	748[45.6]
Max. Speed	RPM	490
Max. Torque	daNm [lb-in]	cont.: 106,2[9400] int.: 123,7[10950]
Max. Pressure Drop	bar [PSI]	cont.: 205 [3000] int.: 241 [4500]
Max. Oil Flow	lpm [GPM]	276[72.9]
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40-140 [-40-284]
Optimal Viscosity range	mm ² /s [SUS]	20-75 [98-347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)



1 Castle nut	7 O-ring	13 Flat key	19 Distribution plate	25 O-ring
2 Shaft seal	8 Washer	14 Output shaft	20 Special shape ring	26 Rear cover
3 Housing	9 shaft seal	15 Rear needle roller bearing	21 Transfer stator payment	27 Screw
4 Oil port plug cap	10 Bearing retainer	16 Flat bearing	22 Special shape ring	
5 Needle roller bearing	11 Flat bearing	17 O-ring	23 Balance plate	
6 Bearing	12 Bearing retainer	18 Transmission shaft	24 Steel ball	



Ordering Code

CWD SERIES		DISP	FLANGE	SHAFT	PORTS	ROTATION	PAINT	FUNCTION			
CODE	DISP cm ³ /rev	CODE	FLANGE	CODE	SHAFT	CODE	ROTATION	CODE	PAINT		
120	121	W4	Wheel Ø147.6 4- Ø13.1 rear pilot pilot Ø128.5×7 	SH	Ø35 parallel key 10×8×45 	A	Standard	CODE	FUNCTION		
160	162		W5	Wheel Ø147.6 4- Ø13.1 Rear pilot Ø127×7 	SL	Ø38 parallel key 9.5×9.5×38.1 	B			Blue	
200	204			A9	6- Ø13.5 SAE Ø106.4 pilot Ø82.5×2.8 	TB	Tapered Ø35 1:10 parallel key 7.96×7×31.5 Nut Fastening Torque: 325 Nm 			C	Black
230	232	W6			Ø106.4 square 4- Ø13.5 pilot Ø82.5×2.8 	TA	Tapered Ø38.1 1:8 parallel key 7.96×7.96×25.4 Nut Fastening Torque: 415-540 Nm 	S	Silver grey		
260	261		T2		Ø106.4 square 4- Ø13.5 pilot Ø82.5×2.8 	T2	Tapered Ø31.75 1:8 parallel key 7.96×7.96×25.4 Nut Fastening Torque: 200±10 Nm 	A	Standard		
300	300			RQ		Ø106.4 square 4- Ø13.5 pilot Ø82.5×2.8 	RQ	Ø25.3 Splined 6-25.3×21×6.2 	N	Big radial force	
350	348	UD					Ø106.4 square 4- Ø13.5 pilot Ø82.5×2.8 	UD	9/16-18UNF	D	No case drain
375	363		UF		7/8-14UNF					UF	7/8-14UNF
470	465			CC		G1/2					
540	536	MC					M22×1.5	MC	M22×1.5		
620	631		S		Low temp.					S	Low temp.
750	748										



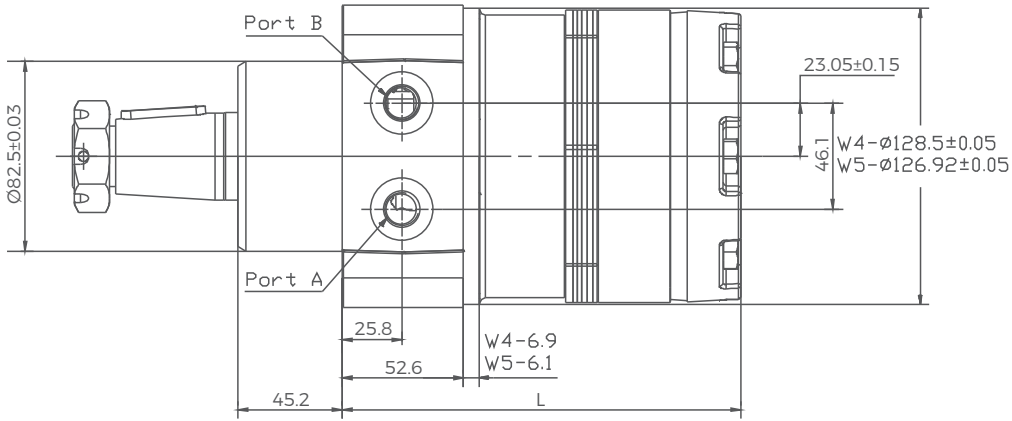
Specifications

Type		GWD120	GWD160	GWD200	GWD230	GWD260	GWD300
Disp. cm ³ /rev.		121	162	204	232	261	300
Max. Speed	Cont	360	370	300	260	260	250
RPM	Int.	490	470	370	320	350	320
Max. Flow	Cont	45	61	68	68	76	83
LPM	Int.	61	76	83	83	91	95
Max. Torque	Cont	327	475	542	611	712	825
Nm	Int.	383	542	633	712	791	938
Max. Pressure Drop	Cont	207	207	207	207	207	207
bar	Int.	241	241	241	241	241	241
	Peak	276	276	276	276	276	276
Max. No-load Pressure	bar	8	10	10	10	10	10
Min Operating Nm	Drop Cont	235	342	390	440	513	513
Torque At Max. Pres.	Drop Int.	280	396	462	520	577	577
Weight kg	GWD	13.3	13.3	13.7	13.8	14.1	14.1

Type		GWD350	GWD375	GWD470	GWD540	GWD620	GWD750
Disp. cm ³ /rev.	cm ³ /rev.	348	363	465	536	631	748
Max. Speed	Cont	220	200	160	140	120	100
RPM	Int.	270	250	200	170	150	130
Max. Flow	Cont	76	76	76	76	76	76
LPM	Int.	95	91	91	91	91	91
Max. Torque	Cont	921	1006	1096	983	1014	1062
Nm	Int.	1045	1158	1184	1243	1291	1237
Max. Pressure Drop	Cont	207	207	172	138	121	103
bar	Int.	241	241	189	173	155	121
	Peak	276	276	207	207	173	138
Max. No-load Pressure	bar	10	10	10	12	12	12
Min Operating Nm	Drop Cont	663	724	822	737	761	797
Torque At Max. Pres.	Drop Int.	763	845	900	945	981	940
Weight kg	GWD	15.5	15	15.5	16.1	16.8	17.5



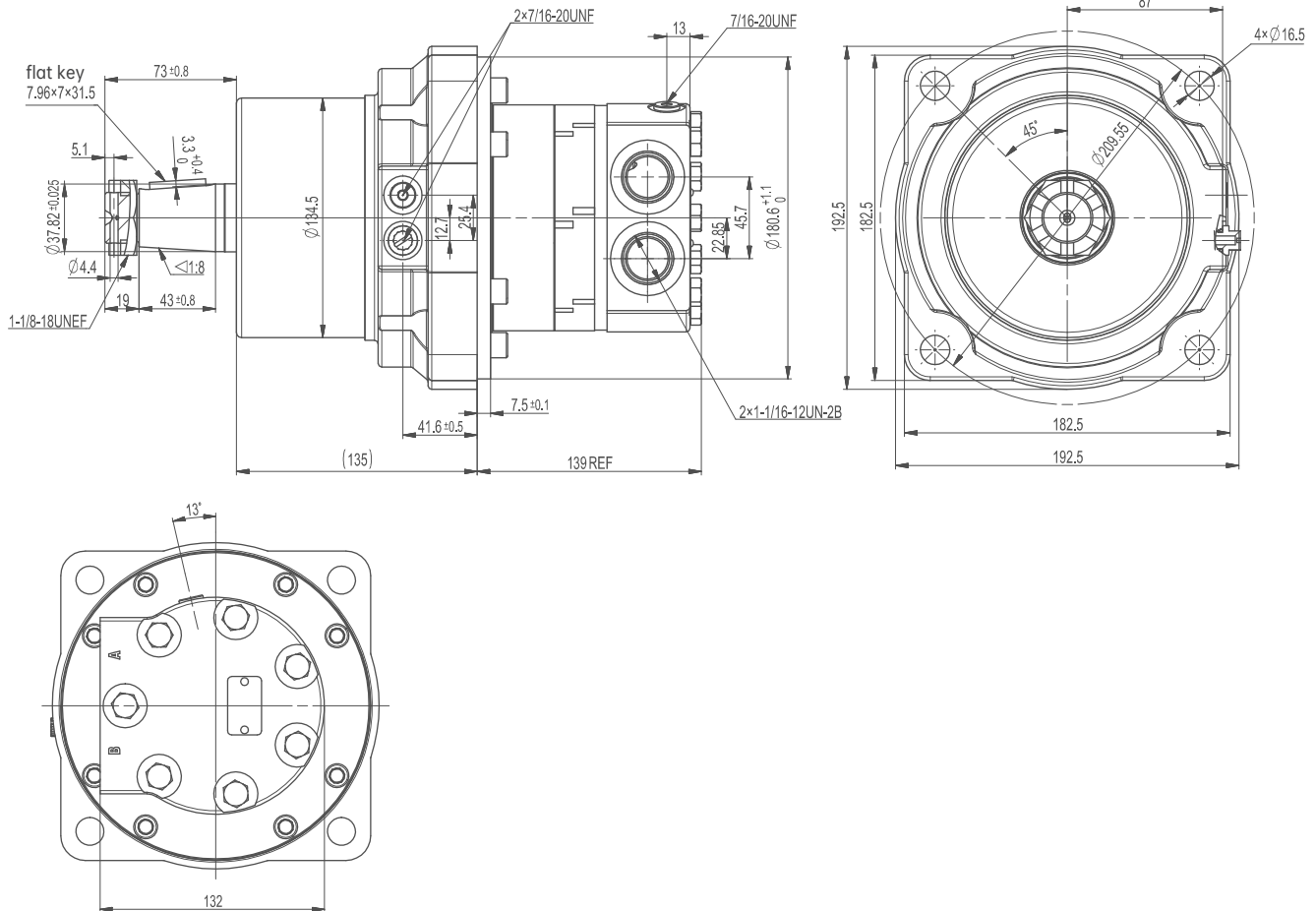
GWD Dimensions and Mountings



Model	L(mm)	Weight(kg)
GWD120	156[6.14]	13.3[29.4]
GWD160	156[6.14]	13.3[29.4]
GWD200	159[6.26]	13.7[30.2]
GWD230	162[6.38]	13.8[30.4]
GWD260	165[6.50]	14.1[31.0]
GWD300	168[6.61]	14.4[31.8]
GWD350	172[7.17]	15.5[29.4]
GWD375	174[6.85]	15.0[33.0]
GWD470	182[7.17]	15.5[34.2]
GWD540	188[7.40]	16.1[35.4]
GWD620	196[7.72]	16.8[36.9]
GWD750	206[8.11]	17.5[38.5]



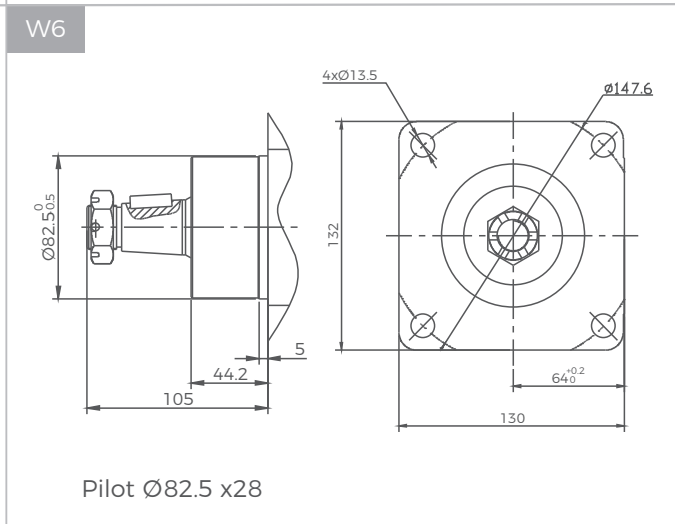
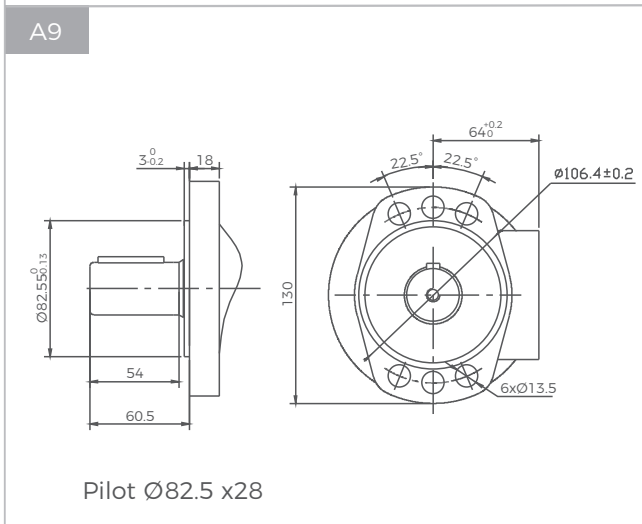
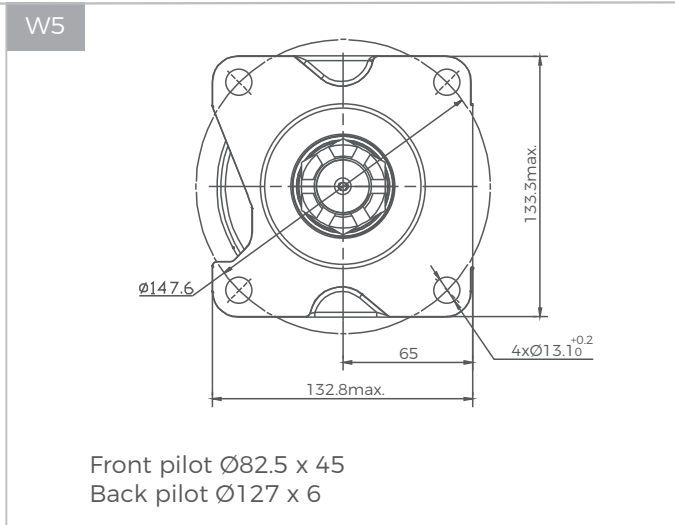
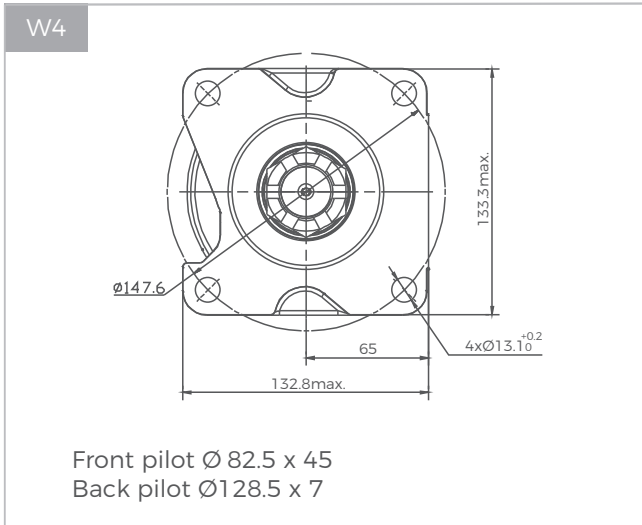
GWD with Brake Dimensions and Mountings



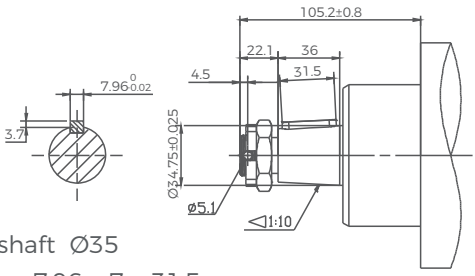
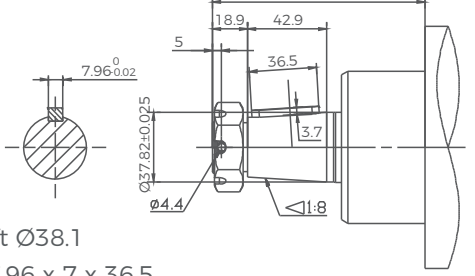
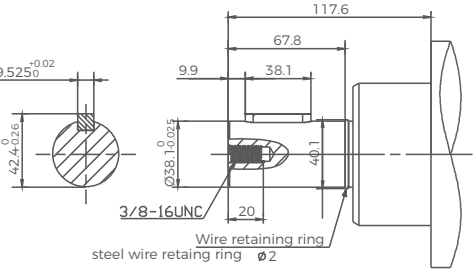
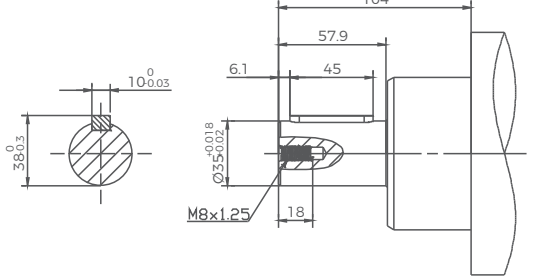
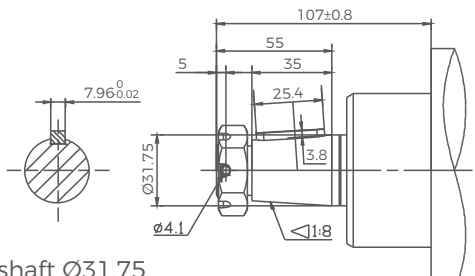
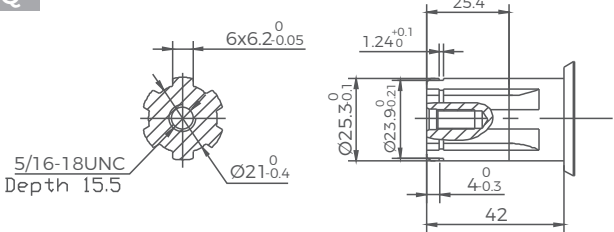
Displacement	540cm ³ /rev
Max.continuous rating pressure	20.5MPa
Rated brake torque	2600Nm
The brake release pressure	4MPa, Max.
Release pressure	20.7MPa, Max.
Working temperature	82°C
Brake spring quantity	25
Paint	BLACK



GWD Flange Covers Dimensions



GWD Shafts Dimensions

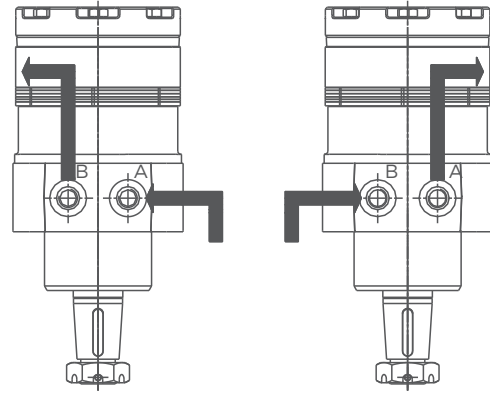
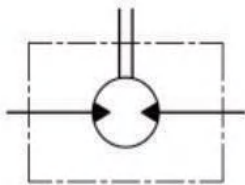
<p>TB</p>  <p>Tapered shaft $\text{\O}35$ Parallel key 7.96 x 7 x 31.5 Tightening torque: 325 Nm</p>	<p>TA</p>  <p>Tapered shaft $\text{\O}38.1$ Parallel key 7.96 x 7 x 36.5 Tightening torque: 410-540 Nm</p>
<p>SL</p>  <p>Straight shaft $\text{\O}38.1$ Parallel key 9.5 x 9.5 x 38.1</p>	<p>SH</p>  <p>Straight shaft $\text{\O}35$ Parallel key 10 x 8 x 45</p>
<p>T2</p>  <p>Tapered shaft $\text{\O}31.75$ Parallel key 7.96 x 7.96 x 25.4 Tightening torque: 200±10 Nm</p>	<p>RQ</p>  <p>Splined shaft 6-25.3 x 21 x 6.2</p>

GWD Series Hydraulic Motors

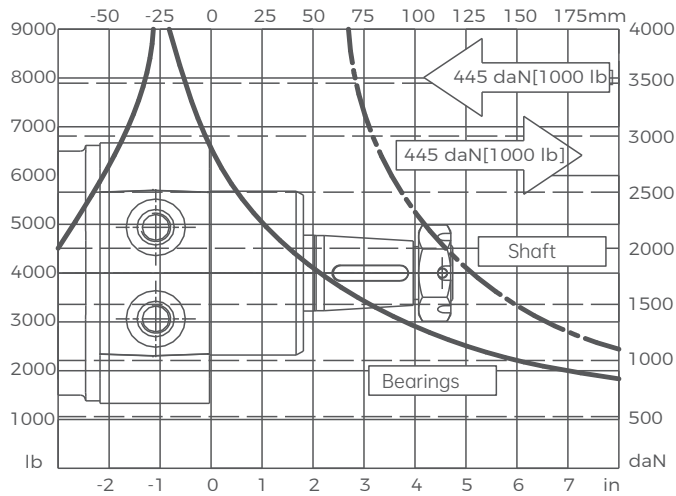
Shaft Rotation Direction: Standard

When looking at the shaft end of motor, shaft will rotate:

- Clockwise. when port B is pressurized.
- Counter-clockwise when port A is pressurized.



W4 & W5 Wheel Mounts



GWH Series Hydraulic Motors

Options

- Flange connection
- Motor with needle roller bearing
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

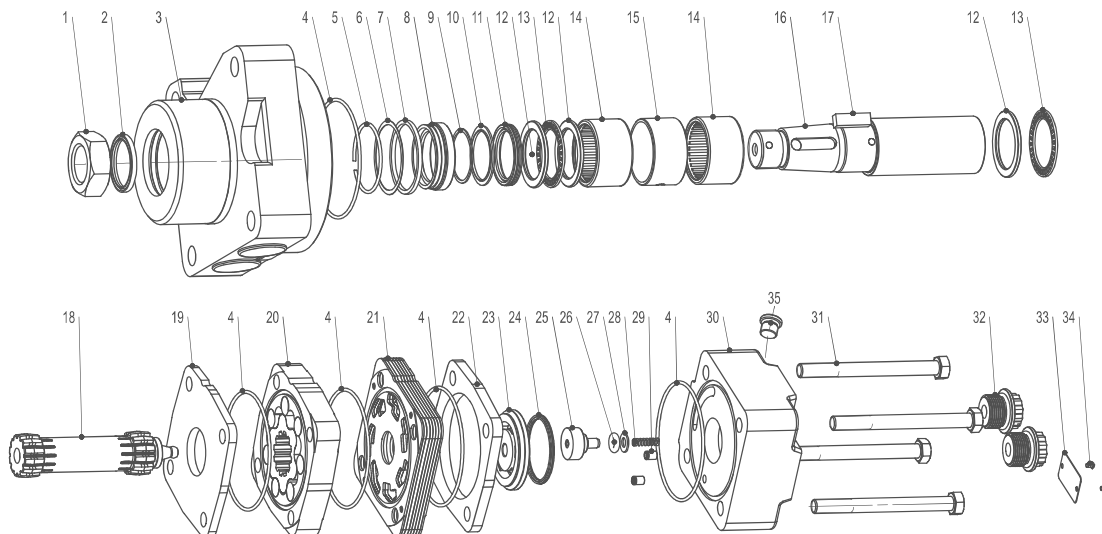
Applications

- Agricultural Equipment
- Utility & Off-Road Vehicles
- Material Handling machines
- Forklifts
- Street sweepers
- Mining machines














General

Max.Displacement	cm ³ /rev [in ³ /rev]	409[24.9]
Max.Speed	RPM	830
Max.Torque	daNm [lb-in]	cont:946[8400] int:1019[9050]
Max.Pressure Drop	bar [PSI]	cont:207[3000] int:276[4000]
Max.Oil Flow	lpm [GPM]	95[25]
Min. Speed	[RPM]	5
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40÷140[-40÷284]
Optimal Viscosity range	mm ² /s [SUS]	20÷75[98÷347]
Filtration		ISO code 20/16 (Min.recommended fluid filtration of 25 microns)



- | | | | |
|-------------------------------|---------------------------|---------------------------------|--------------------------------|
| 1. Hexagon Nut | 11. Shaft Seal | 19. Partition Plate | 28. Spring |
| 2. Dust Seal | 12. Thrust Washer | 20. Rotor Subassembly | 29. Check Valve |
| 3. Housing | 13. Plain Bearing | 21. Welded Valve Plate Assembly | 30. Rear Cover |
| 4. O-Ring | 14. Needle Roller Bearing | 22. Spacer Sleeve | 31. Hexagon Head Bolt |
| 5. Wire Spring Retaining Ring | 15. Spacer Ring | 23. Valve Plate | 32. Oil Port Cap (with O-Ring) |
| 6. Gasket | 16. Output shaft | 24. Seal Ring | 33. Nameplate |
| 7. Rectangular Seal | 17. Square Key | 25. Brake Pad Assembly | 34. Nameplate Rivet |
| 8. Combined Oil Seal Bracket | 18. Drive Shaft | 26. O-Ring | 35. O-Joint |
| 9. Shaft Seal Retainer | | 27. Quad-Ring Retainer | |

Ordering Code

CWH SERIES		DISP	FLANGE	SHAFT	PORTS	ROTATION	PAINT	FUNCTION						
CODE	DISP cm ³ /rev [in ³ /rev]	CODE	FLANGE	CODE	SHAFT	CODE	ROTATION	CODE	FUNCTION					
50	52 [3.2]	W9	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x41 Back pilot Ø126.92x5 	TC	Tapered Ø31.75 Parallel key 7.96 x7 x 24 	A	Standard	A	No paint					
80	76 [4.6]		W10			Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF		7/8-14UNF	B	Blue	Blue		
90	89 [5.4]					W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 		UF	7/8-14UNF	C	Black	C	Black
110	111 [6.8]	W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF	7/8-14UNF						S	Silver grey	S	Silver grey
125	127 [7.7]										W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF	7/8-14UNF
160	164 [10.0]	W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF	7/8-14UNF	S	Silver grey	S	Low temp.					
200	205 [12.5]									W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF	7/8-14UNF	S
250	254 [15.5]	W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF	7/8-14UNF	S	Silver grey	S	Low temp.					
300	293 [17.9]									W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF	7/8-14UNF	S
400	409 [24.9]	W10	Wheel Ø147.62 4-Ø13.1 Front pilot Ø82.5x45.2 Back pilot Ø126.92x 5 	UF	7/8-14UNF	S	Silver grey	S	Low temp.					

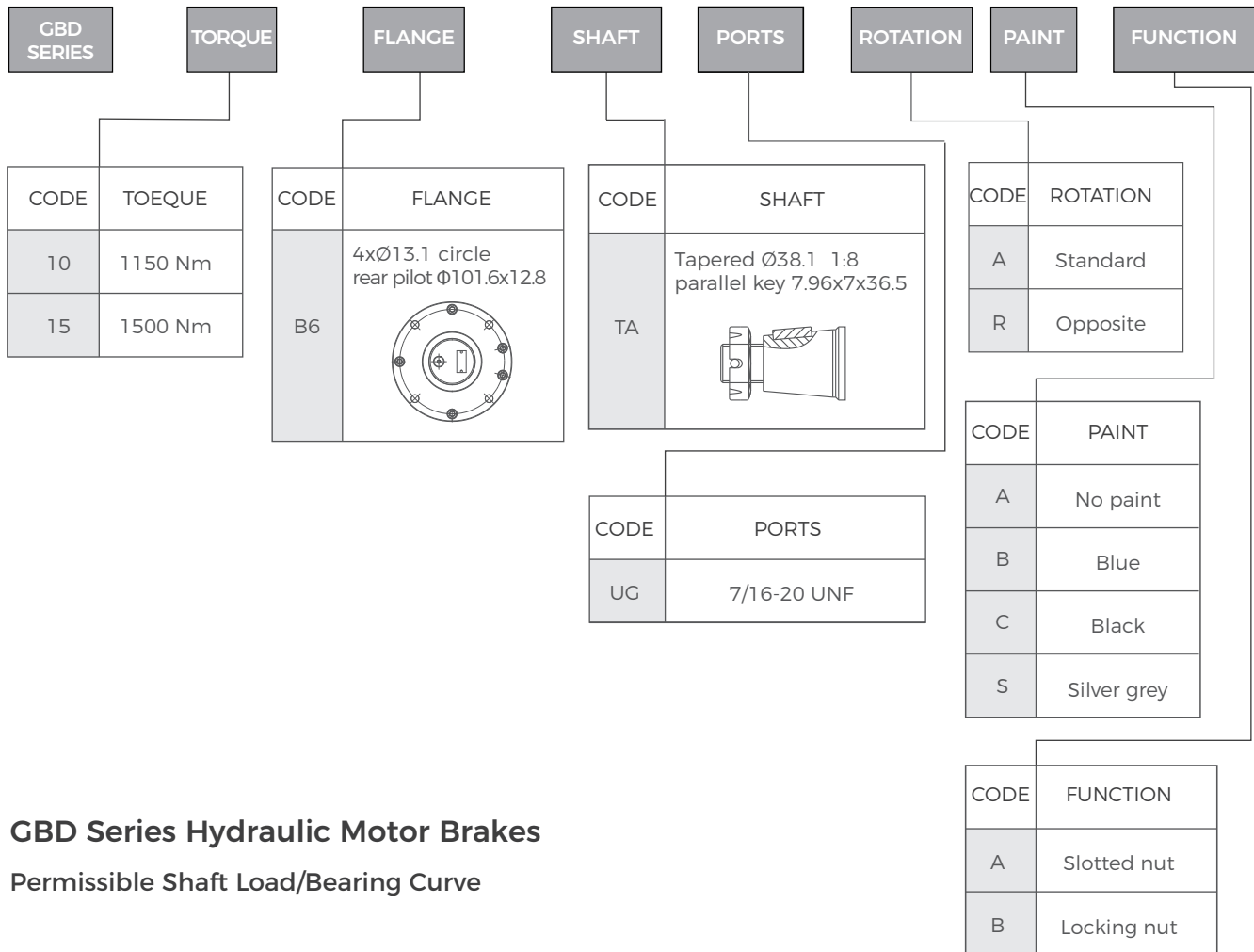


GWH Specifications

Type		GWH050	GWH080	GWH090	GWH110	GWH125
Displacement cm ³ /rev [in ³ /rev]		52[3.2]	76[4.6]	89[5.4]	111[6.8]	127[7.7]
Max. Speed,	Cont.	680	800	680	680	580
[RPM]	Int.	830	950	840	850	740
Max. Torque	Cont.	135[1200]	191[1700]	225[2000]	298[2650]	338[3000]
daNm [lb-in]	Int.	158[1400]	222[1975]	270[2400]	349[3100]	394[3500]
Max. Pressure Drop Cont.	cont.	207[3000]	207[3000]	207[3000]	207[3000]	207[3000]
Drop	int.	242[3500]	242[3500]	242[3500]	242[3500]	242[3500]
bar [PSI]	Peak**	276[4000]	276[4000]	276[4000]	276[4000]	276[4000]
Max. Oil Flow	Cont.	38 [10]	53[14]	61 [16]	76 [20]	76 [20]
lpm [GPM]	int.	45[12]	64[17]	76[20]	95 [25]	95[25]

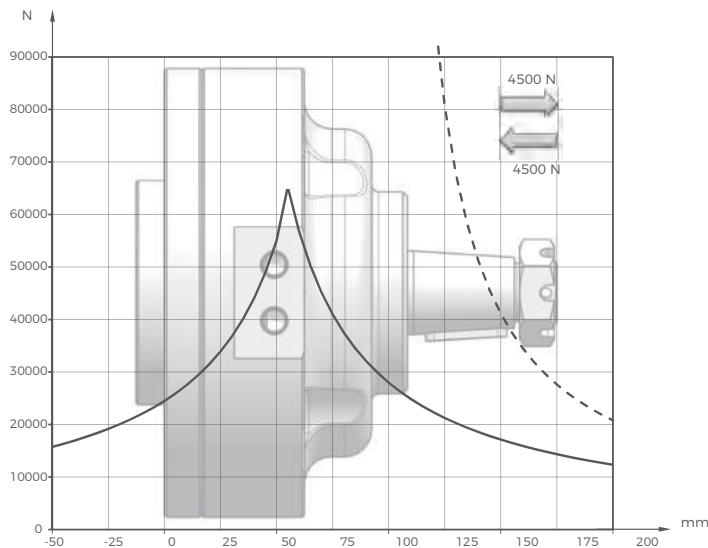
Type		GWH050	GWH080	GWH090	GWH110	GWH125
Displacement cm ³ /rev [in ³ /rev]		164[10.0]	205[12.5]	254[15.5]	293[17.9]	409[24.9]
Max. Speed,	Cont.	460	370	290	250	180
[RPM]	Int.	580	460	370	320	230
Max. Torque	Cont.	44[3975]	569[5050]	704[6250]	811[7200]	946[8400]
daNm [lb-in]	Int.	512[4550]	653[5800]	799[7100]	929[8250]	1019[9050]
Max. Pressure Drop Cont.	cont.	207[3000]	207[3000]	207[3000]	207[3000]	173[2500]
Drop	int.	242[3500]	242[3500]	242[3500]	242[3500]	189[2750]
bar [PSI]	Peak**	276[4000]	276[4000]	276[4000]	276[4000]	207[3000]
Max. Oil Flow	Cont.	76[20]	76 [20]	76 [20]	76 [20]	76 [20]
lpm [GPM]	int.	95[25]	95 [25]	95[25]	95[25]	95[25]

Ordering Code



GBD Series Hydraulic Motor Brakes

Permissible Shaft Load/Bearing Curve



As shown in the figure, when the axial load is ON, the radial allowable load of the output shaft is related to the distance between the mounting surface of the flange and the point where the load is applied. The solid line shows the allowable bearing radial load. Denotes the use of hydraulic oil containing anti-wear additives, and the curve is established on the basis of continuous output torque cut, motor speed of 100rpm, bearing L10 service life of 2000 hours. The dashed line shows the maximum radial load on the shaft. If the shaft extension load exceeds this value, the motor will be damaged.



GBD Series Hydraulic Motor Brakes

Options

- Double heavy-duty roller bearings
- Double release ports
- Wet braking, spring loaded
- Smaller axial installation size
- Low noise, long service life

Applications

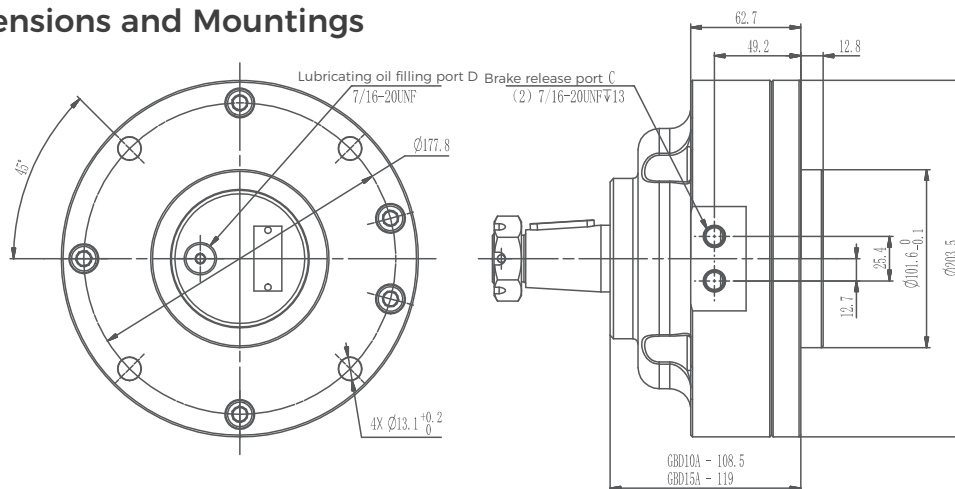
- Aerial work platform
- Wheel drive
- Swing drive
- Transmission



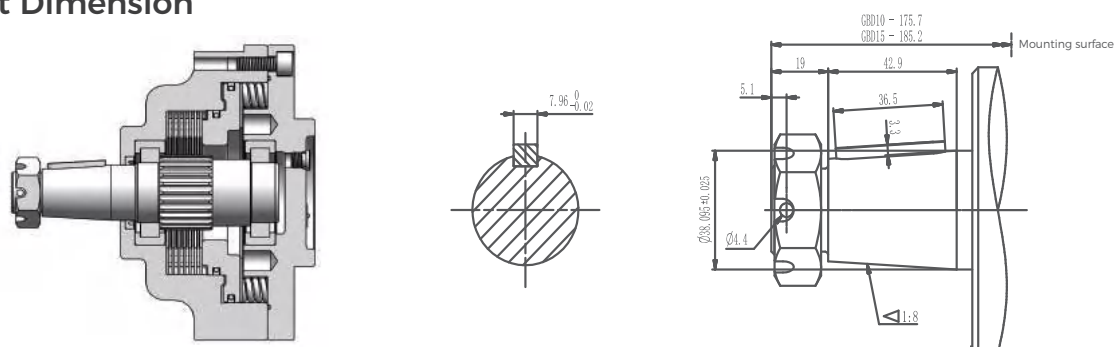
General

Specifications		GBD10	GBD15
Min. static torque	Nm	1150	1500
Brake release pressure	MPa	2.8	2.8
Max. release pressure	MPa	27.6	27.6
Min. oil released by brake	cm ³	11.5	11.5
Max. speed	rpm	250	250
Brake chamber oil volume	cm ³	100-120	100-120
Max. working oil temperature	°C	82	82
Weight	Kg	18	20

GBD Dimensions and Mountings



GBD Shaft Dimension



GHP Hand Pump

This hand pump is suitable for various types of mobile equipment, typically used to release static hydraulic brakes. Depending on the type of brake, pressing the pump lever 3-5 times will usually release the brake, allowing the equipment to be moved to the service area for charging, refueling, maintenance, etc.

During operation, the operator must press the valve lever to the lowest position, then press the pump lever until the brake is released. After the equipment has been moved, pull up the valve lever and the brake will resume its braking function.

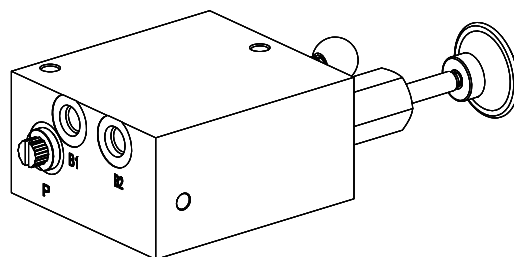
Dual pressure outlets ensure smooth movement of the two wheels of the mobile equipment.

Technical Data

Oil discharged by pressing the rod per time: 1.3 cm³

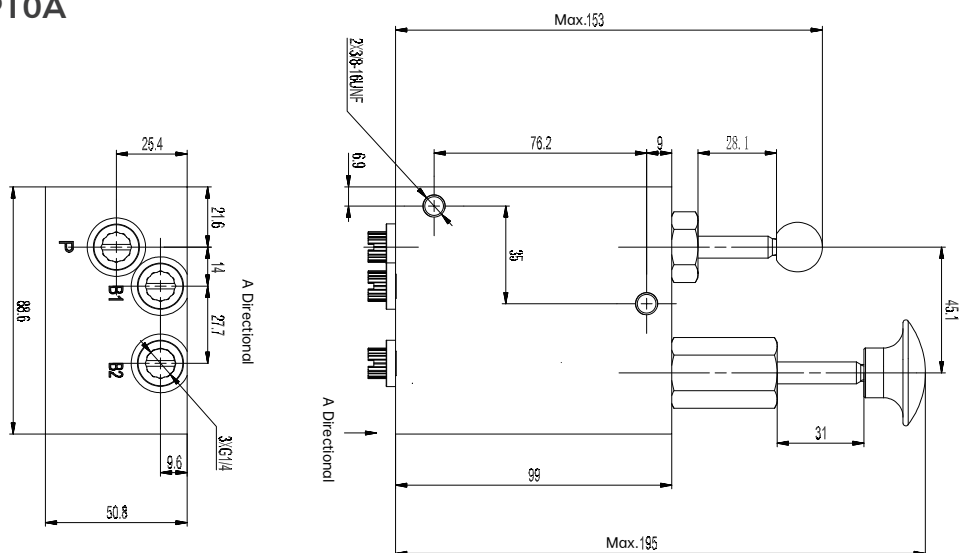
Max. Working Pressure: 27.5 MPa

Operating Temperature: -30°C-110°C

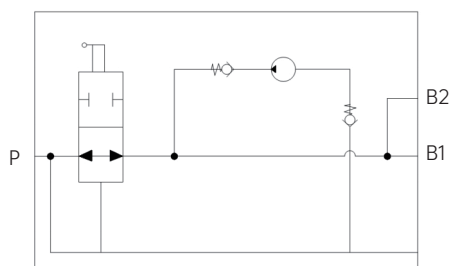


Ordering Code and Dimensions

Model: GHP10A



Schematic Diagram





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