

# Catalog

MUD PUMP  
UNIT AND  
SOLID  
CONTROL  
SYSTEM



# MUD PUMP UNIT AND SOLID CONTROL SYSTEM

## 1. MUD PUMP

The RGF series mud pump is advanced in structure and compact and small in size. It has perfect working performance and conforms to the drilling requirements of oilfields with high pump pressures and large capacity.

The RGF series mud pump has a long stroke and can work at low strokes, which effectively enhances the water lifting capability of the mud pump and prolongs the service-life of the wearing parts at the hydraulic end. The suction damper is advanced and reliable, allowing it to optimize the suction effect of the mud pump.

The important parts of the RGF series pumps such as hydraulic cylinder, crankshaft, and herringbone gear are made of high-quality alloy steel. The main frame uses a steel plate welding structure with high strength, rigidity and light weight.

RGF series mud pumps have high interchangeability; all wearing parts at the hydraulic end conform to parts interchange requirements specified in API Spec. It is easy to maintain, and therefore offers good working performance.

### RGF500 MUD PUMP Specification

Stroke number / (SPM)	Rated power		Diameter of liner (in) and rated pressure, MPa (psi)															
			6.69		6.30		5.91		5.51		5.12		4.72		4.30		3.94	
	KW	HP	9.4	1365	10.6	1540	12.1	1750	13.9	2010	16.1	2335	18.9	2740	22.5	3260	27.2	3945
Displacement L/S (GPM)																		
170	384	51	36.75	32.56	28.61	24.93	21.49	18.31	15.39	12.72								
		5	(582)	(516)	(453)	(395)	(340)	(290)	(244)	(201)								
*165	*373	50	35.67	31.60	27.77	24.19	20.86	17.77	14.93	12.34								
		0	(565)	(501)	(440)	(383)	(330)	(281)	(236)	(195)								
150	339	45	32.43	28.73	25.25	21.99	18.96	16.16	13.58	11.22								
		5	(514)	(455)	(400)	(348)	(300)	(256)	(215)	(178)								
140	316	42	30.27	26.81	23.56	20.53	17.70	15.08	12.67	10.47								
		4	(480)	(425)	(373)	(325)	(280)	(239)	(201)	(166)								
130	294	39	28.11	24.90	21.88	19.06	16.44	14.00	11.77	9.73								
		4	(445)	(394)	(347)	(302)	(260)	(222)	(186)	(154)								
120	271	36	25.94	22.98	20.20	17.60	15.17	12.93	10.86	8.98								
		4	(411)	(364)	(320)	(279)	(240)	(205)	(172)	(142)								
110	249	33	23.78	21.07	18.52	16.13	13.91	11.85	9.96	8.23								
		3	(377)	(334)	(293)	(255)	(220)	(188)	(158)	(130)								
1			0.2162	0.1915	0.1683	0.1466	0.1264	0.1077	0.0905	0.0748								
			(3.427)	(3.036)	(2.668)	(2.324)	(2.004)	(1.707)	(1.435)	(1.186)								



### RGF800 MUD PUMP Specification

Stroke number / (SPM)	Rated power		Diameter of liner (in) and rated pressure, MPa (psi)															
			6.69		6.30		5.91		5.51		5.12		4.72		4.30		3.94	
	KW	HP	13.8	2000	15.6	2260	17.7	2570	20.3	2950	23.6	3420	27.7	4015	53.0	4780	34.5	5000
			Displacement L/S (GPM)															
160	636	853	41.51	36.77	32.32	28.15	24.27	20.68	17.38	14.36								
			(658)	(583)	(512)	(446)	(358)	(328)	(275)	(227)								
*150	*596	800	38.92	34.47	30.30	26.39	22.76	(19.39)	16.29	13.47								
			(617)	(546)	(480)	(418)	(360)	(307)	(258)	(213)								
140	557	747	36.32	32.17	28.28	24.63	21.24	18.10	15.21	12.57								
			(575)	(510)	(448)	(390)	(336)	(287)	(241)	(199)								
130	517	693	33.73	29.88	26.26	22.87	19.72	16.81	14.12	11.67								
			(534)	(473)	(416)	(362)	(312)	(266)	(224)	(185)								
120	477	640	31.13	27.58	24.24	21.11	18.21	15.51	13.03	10.77								
			(493)	(437)	(384)	(334)	(288)	(246)	(206)	(171)								
110	437	587	28.54	25.28	22.22	19.35	16.69	14.22	11.95	9.87								
			(452)	(400)	(352)	(307)	(264)	(225)	(189)	(156)								
1			0.2594	0.2298	0.2020	(0.1759)	0.1517	0.1293	0.1086	0.0898								
			(4.112)	(3.643)	(3.202)	(2.789)	(2.405)	(2.049)	(1.722)	(1.423)								

## RGF1000 MUD PUMP Specification

Stroke number/ (SPM)	Rated power		Diameter of liner (in) and rated pressure, MPa (psi)													
			6.69		6.30		5.91		5.51		5.12		4.72		4.30	
	kW	HP	16.6	2410	18.8	2725	21.4	3100	24.5	3555	28.4	4125	33.4	4840	34.5	5000
Displacement L/S (GPM)																
150	799	1071	43.24 (685)		38.30 (607)		33.66 (533)		29.33 (465)		25.29 (401)		21.55 (341)		18.10 (287)	
*140	*746	1000	40.36 (639)		35.75 (566)		31.42 (498)		27.37 (434)		23.60 (374)		20.11 (318)		16.90 (268)	
130	692	929	37.47 (594)		33.20 (526)		29.13 (462)		25.42 (403)		21.92 (347)		18.67 (296)		15.69 (248)	
120	639	857	34.59 (548)		30.64 (485)		26.93 (427)		23.46 (372)		20.23 (320)		17.24 (273)		14.48 (229)	
110	586	786	31.71 (502)		28.09 (445)		24.93 (391)		21.51 (341)		18.54 (294)		15.80 (250)		13.28 (210)	
100	533	714	28.83 (457)		25.53 (404)		22.44 (355)		19.55 (310)		16.86 (267)		14.36 (227)		12.07 (191)	
1			0.2883 (4.569)		0.2553 (4.047)		0.2244 (3.557)		0.1955 (3.099)		0.1686 (2.672)		0.1436 (2.277)		0.1207 (1.913)	

## RGF1300 MUD PUMP Specification

Stroke number/ (SPM)	Rated power		Diameter of liner (in) and rated pressure, MPa (psi)													
			7.09		6.69		6.30		5.91		5.51		5.12			
	kW	HP	18.7	2720	21.0	3050	23.7	3440	27.0	3915	31.0	4495	34.5	5000		
Displacement L/S (GPM)																
130	1050	1408	50.42 (799)		44.97 (713)		39.83 (631)		35.01 (555)		30.50 (483)		26.30 (417)			
*120	*969	1300	46.54 (737)		41.51 (658)		36.77 (583)		32.32 (512)		28.15 (446)		24.27 (385)			
110	889	1192	42.66 (676)		38.05 (603)		33.71 (534)		29.62 (469)		25.81 (409)		22.25 (352)			
100	808	1083	38.78 (614)		34.59 (548)		30.64 (485)		26.93 (427)		23.46 (372)		20.23 (320)			
90	727	975	34.90 (553)		31.13 (493)		27.58 (437)		24.24 (384)		21.11 (334)		18.21 (288)			
1			0.3878 (6.147)		0.3459 (5.483)		0.3064 (4.857)		0.2693 (4.269)		0.2346 (3.719)		0.2023 (3.206)			

## RGF1600 MUD PUMP Specification

Stroke number/ (SPM)	Rated power		Diameter of liner (in) and rated pressure, MPa (psi)											
			7.09		6.69		6.30		5.91		5.51		5.12	
	kW	HP	23.6	3345	25.9	3750	29.2	4235	33.2	4820	35.1	5000	34.5	5000
Displacement L/S (GPM)														
130	1293	1733	50.42 (799)		44.97 (713)		39.83 (631)		35.01 (555)		30.50 (483)		26.30 (417)	
*120	1193	1600	46.54 (737)		41.51 (658)		36.77 (583)		32.32 (512)		28.15 (446)		24.27 (385)	
110	1094	1467	42.66 (676)		38.05 (603)		33.71 (534)		29.62 (469)		25.81 (409)		22.25 (352)	
100	994	1333	38.78 (614)		34.59 (548)		30.64 (485)		26.93 (427)		23.46 (372)		20.23 (320)	
90	727	975	34.90 (553)		31.13 (493)		27.58 (437)		24.24 (384)		21.11 (334)		18.21 (288)	
1			0.3878 (6.147)		0.3459 (5.483)		0.3064 (4.857)		0.2693 (4.269)		0.2346 (3.719)		0.2023 (3.206)	

**Note:**

1. The aforementioned parameters are calculated in accordance with 100% cubage efficiency and 90% mechanical efficiency.
2. The numbers marked with \* are recommended stroke numbers and input power under continuous running.

## 2. PUMP-ENGINE UNIT

The pump-engine unit can be associated with different drilling rigs or workover rigs. Its power can be diesel engine or motor. The transmission ways include belt, chain, gear, transmission shaft and other ways. The moving ways include the skid mounted type and the trailer-mounted type. This unit can be equipped with a rain-proof shed, sand-proof shed and winter-proof facilities according to the special requirements of the user.

**Specification I**

Type of pump-engine unit		JBZ16DB	JBZ13DB	JBZ10C	JBZ8C
Motor	Model	YJ13A6	YJ31F4	YZ08	YJ23
	Power (hp)	1609.23	1341.02	1072.88	804.61
	Rated speed (r/min)	1000	1000	970	1035
Mud pump	Model	F1600	RGF1300	RGF1000	RGF800
	Power (hp)	1577.04	1282.02	985.65	788.52
	Rated stroke (s/min)	120	120	140	150
	Transmission ratio	4.206	4.206	4.207	4.185
Drive ways		Belt drive	Belt drive	Belt drive	Belt drive/chain drive
Total weight (lbs)		99207	94798	57320	55115

**Specification II**

Type of pump-engine unit		JBZ16A	JBZ13B	JBZ13A	JBZ10B
Diesel engine	Model	A12V190PZL	A12V190PZL-1	A12V190PZL-3	CAT 3512
	Power (hp)	1609.22	1287.38	1475.12	1011.13
	Rated speed (r/min)	1500	1200	1300	1200
Mud pump	Model	RGF1600	RGF1300	RGF1300	RGF1000
	Power (hp)	1577	1282	1282	985
	Rated stroke (s/min)	120	120	120	140
	Transmission ratio	4.206	4.206	4.206	4.207
Clutch type		Double LT600×125	Double LT600×125	No	Double LT600×125
Transmission box or gear box type		ZDY450-1.6- II	ZDY450-2- II	YOFJ750-20FLSH	YLBT900-45FDF (+15)
Total weight (lbs)		123740	97003	94798	88184

### Specification III

Type of pump-engine unit		JBZ10A	JBZ8B	JBZ8A	JBZ5A
Diesel engine	Model	G12V190PZL-3	CAT3412	G12V190PZL-2	CATC15
	Power(hp)	1086.23	760.36	804.61	539.09
	Rated speed (r/min)	1300	2100	1000	2100
Mud pump	Model	RGF1000	RGF800	RGF800	RGF500
	Power (hp)	985	788	788	493
	Rated stroke (s/min)	140	150	150	165
	Transmission ratio	4.207	4.185	4.185	4.268
Clutch type		Double LT600×125	No	Double LT600×125	No
Transmission box or gear box type		JS3-1000	S6610	JS3-1000	S5610
Total weight (lbs)		74957	70547	66138	57320



### 3. SOLID CONTROL SYSTEM

The solid control system can be associated with the drilling rigs or workover rigs, including the skid-mounted type (NJXX), trailer type (TNJXX) and pump tank integrated type (BGC). It can be equipped with a rain-proof shed, sand-proof shed and winter -proof equipment according to the special requirements of the end-user.



## Specification

Type	Model of solid control system	Drilling rig or workover rig	Total capacity of mud tank (ft <sup>3</sup> )	Number of mud tank	Purification grade
Skid-mounted type (NJXX)	NJ40	For workover rig	1412.58	1/2	1
	NJ50	For workover rig	1765.73	2	1
	NJ60	For workover rig	2118.88	2	4
	NJ120	6600ft drilling rig	4237.76	3/4	5
	NJ180	10000ft drilling rig	6356.64	3/4	5
	NJ200	13000ft drilling rig	7062.93	4/5	5
	NJ250	16500ft drilling rig	8828.67	6 (Inc. trip/cooling tank)	5
	NJ400	23000ft drilling rig	14125.87	6 (Inc. trip/cooling tank)	5
Trailer type (TNJXX)	TNJ100	6600ft trailer-mounted drilling rig	3531.47	3	5
	TNJ100B	6600ft trailer-mounted drilling rig	3531.47	4	5
Pump tank integrated type (BGC)	BGC	For workover rig	1271.33	1	

### 4. MUD CIRCULATION MANIFOLD SYSTEM

The mud circulation manifold system consists of mud gate valve, high pressure union, three-way valve, four-way valve, elbow, high pressure hose, pup joint, and pressure gauge.

The design and fabrication of the mud circulation manifold system conforms to SY/T5244-2006 standards.



### Specification

Model	ZG50-35、ZG80-35、ZG100-35
Working pressure (psi)	5000
Opening diameter (")	2/3/4
Working medium	Oil / gas / water / mud / cement
Model for drilling rig	ZJ20、ZJ30、ZJ40、ZJ50、ZJ70

## 5. CHOKE AND KILL MANIFOLDS

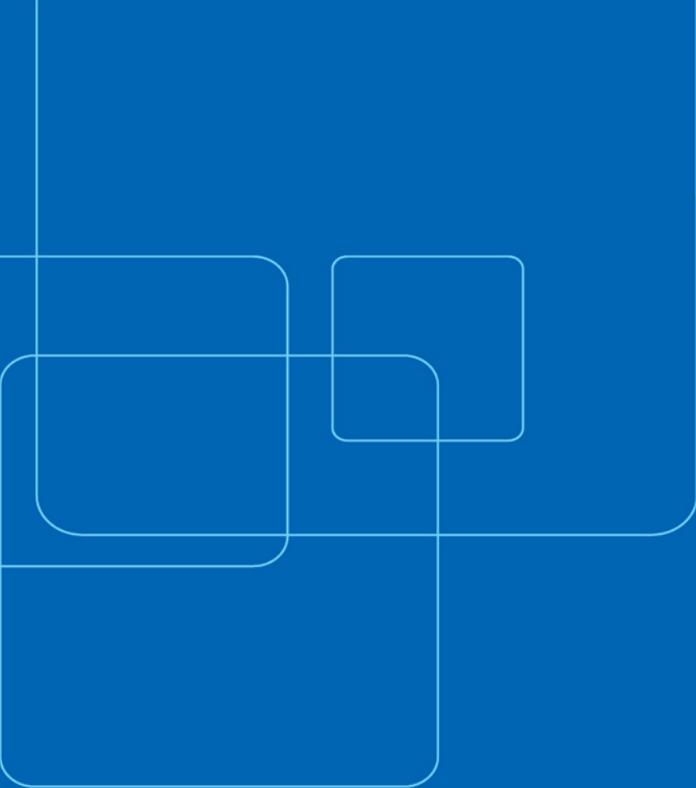
Choke and kill manifolds are the key well control devices for balance drilling in petroleum exploration, which can effectively control well blowout, overflow, prevent oil layer pollution and improve drilling speed.

The design and fabrication of the choke and kill manifolds conform to API Spec 16C standards.



### Specification

Name	Choke manifold	Kill manifold
Model	JG-21, JGS-35, JGY-35, JGS-70, JGY-70	YG-21, YG-35, YG-70
Main stem and branch stem diameters	4 1/16"× 4 1/16", 4 1/16"× 3 1/8", 4 1/16"× 2 9/16", 4 1/16"× 2 1/16", 3 1/8"× 3 1/8", 3 1/8"× 2 9/16", 3 1/8"× 2 1/16", 2 9/16"× 2 1/16"	
Working pressure (psi)	3000/5000/10000	
Working temperature	-29~121	
Working medium	Mud, oil, drilling fluid (including H <sub>2</sub> S)	



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