

# FARMMASTER

## DISTRIBUTOR CATALOGUE



# FARMMASTER

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# FARMMASTER

## BENEFITS - NOMENCLATURE

### Farmmaster Range

Onga's Farmmaster range has evolved with the needs of Australian farmers and landowners since Onga's beginning back in 1967. The JJ & OJ series of pumps are engineered for ultimate reliability and outstanding performance.

The **Farmmaster Junior Jet (JJ)** range are compact and efficient, whilst the **Farmmaster Onga Jet (OJ)** range is the flagship of the Onga range; both with precision engineered internals and a coated cast iron housing for high performance and durability. You simply cannot beat this range for reliability. Available in shallow or deep well configurations:

### Shallow Well Pumps

Onga offers a wide variety of reliable shallow well pumps suitable for providing strong and constant pressure such as the JJ and OJ ranges and 500 Series.

### Deep Well Pumps

The Onga JJ & OJ Deep Well range of farm pumps are suitable for supplying water from sources where the suction lift is greater than 7.6 metres. We can offer product solutions that can handle suction lifts down to 49 metres.

The **Onga 543 Jet Pump** is manufactured for both domestic and rural applications. The pump is constructed from industrial grade corrosion-resistant thermoplastic and contains a built-in check valve close coupled to a cool running TEFC electric motor for reliability and ease of service.

Your Onga dealer can tailor these versatile pumps to your requirement, using interchangeable internal components delivering you the efficiency you demand. Farmmaster pumps are built tough to endure demanding conditions. Don't compromise on quality - you can't beat an Onga Farmmaster.

# FARMMASTER

## PRODUCT FEATURES & CUSTOMER BENEFITS

### JET ASSISTED PUMP RANGE

PRODUCT FEATURES	CUSTOMER BENEFITS	JJ	OJ	543
Simple to install and commission	Low cost, fast hassle-free installation	•	•	•
Full range of injectors	Can be engineered to meet needs of each job	•	•	
Large range of injector types	Adaptable to deep or shallow well applications	•	•	
Offset combinations available	Can place pump above flood line	•	•	•
No moving parts down bore	Low maintenance costs	•	•	•
Manual or automatic system	Available to suit your specific application	•	•	•

NOMENCLATURE	JJ	OJ	MOULDED JET
<b>PUMPS</b>	JUNIOR JET	ONGA JET	
<b>SERIES</b>	400 - 600 - 700 - 800		543
<b>INJECTORS</b>	S - SHALLOW WELL		
	D - DEEP WELL		

# ONGA FARMMASTER JET PUMP

## JJ400 & JJ600

onga®

### JJ400



### JJ600



#### KEY FEATURES

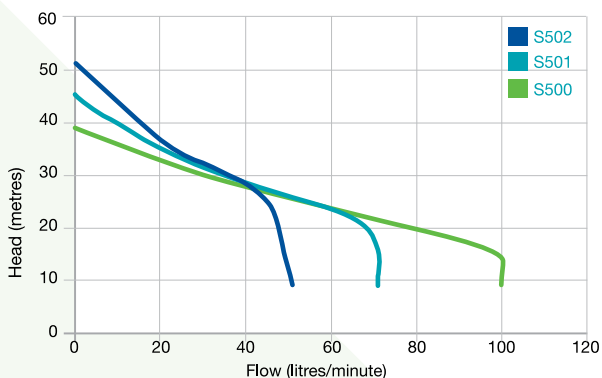
- ◆ Injectors to suit large range of applications.
- ◆ Offset combinations available.
- ◆ No moving parts down bore.
- ◆ Shallow well lifts to 7.6m.
- ◆ Deep well lifts to 27m.
- ◆ Manual or automatic system.
- ◆ Max. head - 52m.
- ◆ Max. flow - 98lpm.

#### KEY FEATURES

- ◆ Strong cast iron construction.
- ◆ Injectors to suit large range of applications.
- ◆ Offset combinations available.
- ◆ No moving parts down bore.
- ◆ Shallow well lifts to 7.6m.
- ◆ Deep well lifts to 37m.
- ◆ Manual or automatic system.
- ◆ Max. head - 63m.
- ◆ Max. flow - 137lpm.

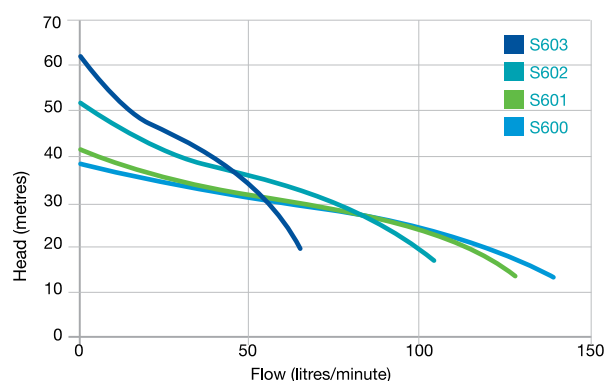
#### SUITABLE INJECTORS

<b>S500</b>	<b>D411</b>
<b>S501</b>	<b>D521</b>
<b>S502</b>	<b>D511</b>



#### SUITABLE INJECTORS

<b>S600</b>	<b>D417</b>
<b>S601</b>	<b>D413</b>
<b>S602</b>	<b>D523</b>
<b>S603</b>	<b>D513</b>
	<b>D620</b>



#### APPLICATIONS

Domestic, industrial or rural pressure pump for use as a manual or automatic pressure system, stock watering, irrigation and water transfer. Option of a large range of water sources including tanks, bores, dams, creeks and rivers thanks to various injector combinations.

For listed JJ400, JJ600, OJ700 & OJ800.

# ONGA FARMMASTER JET PUMP

## OJ700 & OJ800

onga®

OJ700



OJ800



\*Kits are available.

### KEY FEATURES

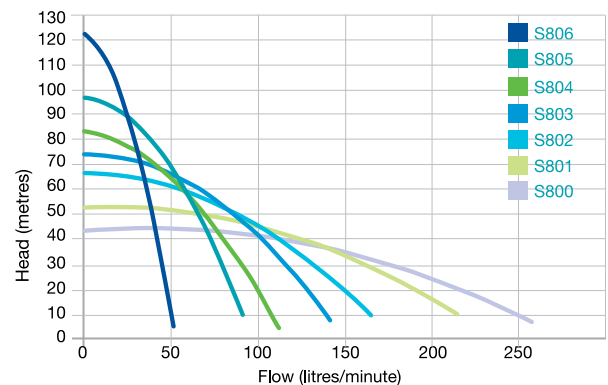
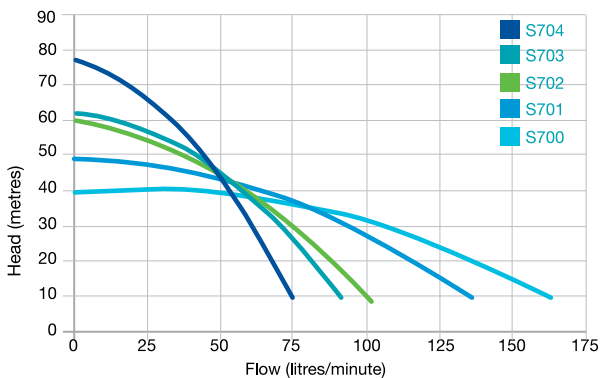
- ◆ Injectors to suit large range of applications.
- ◆ Offset combinations available.
- ◆ No moving parts down bore.
- ◆ Shallow well lifts to 7.6m.
- ◆ Deep well lifts to 40m.
- ◆ Manual or automatic system.
- ◆ Max. head - 77m.
- ◆ Max. flow - 162lpm.

### KEY FEATURES

- ◆ Injectors to suit large range of applications.
- ◆ Offset combinations available.
- ◆ No moving parts down bore.
- ◆ Shallow well lifts to 7.6m.
- ◆ Deep well lifts to 49m.
- ◆ Manual or automatic system.
- ◆ Max. head - 123m.
- ◆ Max. flow - 255lpm.

SUITABLE INJECTORS	
S700	D414
S701	D415
S702	D514
S703	D515
S704	D516
	D611
	D612
	D613

SUITABLE INJECTORS	
S800	D518
S801	D519
S802	D520
S803	D616
S804	D617
S805	D618
S806	D619



# JJ SHALLOW WELL

## PERFORMANCE TABLES

### JJ400

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION DEPTH (M)	TOTAL HEAD IN METRES					MAX. PUMP PRESSURE (kPa)
			15	21	27	34	40	
			CAPACITY (LPM)					
<b>S500*</b>	140-280	0	98	70	40			380
		3	78	56	32			350
		6	56	40	23			320
		7.6	39	28	16			305
<b>S501#</b>	210-350	0	71	66	42	21		440
		3	57	53	34	17		410
		6	40	38	24	12		380
		7.6	28	26	17	8		365
<b>S502*</b>	280-420	0		47	42	24	14	505
		3		38	34	19	11	475
		6		27	24	14	8	445
		7.6		19	17	10	6	430

### JJ600

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION DEPTH (M)	TOTAL HEAD IN METRES					MAX. PUMP PRESSURE (kPa)	
			15	21	27	34	40		46
			CAPACITY (LPM)						
<b>S600*</b>	140-280	0	137	112	71	24			375
		3	109	89	57				345
		6	78	64	40				315
		7.6	55	45	28				300
<b>S601*</b>	210-350	0	125	112	74	33			410
		3	100	89	59	26			380
		6	71	64	42				350
		7.6	50	45	29				335
<b>S602*</b>	280-420	0		100	82	51	29		505
		3		80	66	41	23		475
		6		57	47	29	16		445
		7.6		40	33	20	12		440
<b>S603*</b>	350-560	0			62	48	34	22	615
		3			50	38	27	18	585
		6			35	27	19	12	555
		7.6			25	19	14	9	540

#Factory pressure switch setting (210-350kPa)

\*Pressure switch adjustment needed.

Pump suction 1 1/2" BSP Female.

Pump discharge port 3/4" BSP Female (pump), 1" BSP Female (pressure kit).

Model JJ600 may be purchased as single or three phase.

# OJ SHALLOW WELL PERFORMANCE TABLES

## OJ700

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION DEPTH (M)	TOTAL HEAD IN METRES													MAX. PUMP PRESSURE (kPa)		
			15	21	27	34	40	46	52	58	64	70	76	82	88		95	
			CAPACITY (LPM)															
<b>S700#</b>	210-350#	0	162	159	138	80	27											430
		3	130	127	110	64												400
		6	92	91	79	46												370
		7.6	65	64	55	32												355
<b>S701*</b>	280-455	0			114	94	61	31										540
		3			91	75	49	25										510
		6			65	54	35	18										480
		7.6			46	38	24	12										465
<b>S702*</b>	350-560	0				85	66	42	24									635
		3				68	53	34	19									605
		6				48	38	24	14									575
		7.6				34	26	17	10									560
<b>S703**</b>	420-630	0					69	50	35	22								690
		3					55	40	28	18								660
		6					39	29	20	13								630
		7.6					28	20	14	9								615
<b>S704**</b>	490-700	0					56	51	39	28	18	11						800
		3					45	41	31	22	14	9						770
		6					32	29	22	16	10							740
		7.6					22	20	16	11	7							725

# Factory pressure switch setting.

\* Pressure switch adjustment needed.

+ 700248 pressure switch needed for extra high pressure switching.

Pump suction 1 1/2" BSP Female.

Pump discharge port 1" BSP Male (pump), 1" BSP Female (pressure kit).

Both single and three phase models available.

## OJ800

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION DEPTH (M)	TOTAL HEAD IN METRES													MAX. PUMP PRESSURE (kPa)		
			15	21	27	34	40	46	52	58	64	70	76	82	88		95	
			CAPACITY (LPM)															
<b>S800#</b>	210-350#	0	245	241	218	156	72											430
		3	196	193	174	125												400
		6	140	137	124	89												370
		7.6	98	96	87	62												355
<b>S801*</b>	280-455	0			215	204	160	116	66									525
		3			172	163	128	93	53									495
		6			123	116	91	66										465
		7.6			86	82	64	46										450
<b>S802*</b>	350-560	0				154	150	117	85	54	25							635
		3				123	120	94	68	43	20							605
		6				88	86	67	48	31								575
		7.6				62	60	47	34	22								560
<b>S803*</b>	420-630	0					112	88	64	42	25							730
		3					90	70	51	34	20							700
		6					64	50	36	24	14							670
		7.6					45	35	26	17	10							655
<b>S804**</b>	490-700	0						90	67	47	31	18						800
		3						72	54	38	24	14						770
		6						51	38	27	18	10						740
		7.6						36	27	19	12	7						725
<b>S805**</b>	630-840	0							70	57	43	31						970
		3							56	46	34	25	17					880
		6							40	32	25	18	12					850
		7.6							28	23	17	12	8					835
<b>S806**</b>	770-1050	0										34	33	30	25	18		1145
		3										27	26	24	20	14		1115
		6										19	18	17	14	10		1085
		7.6										14	13	12	10	7		1070

# Factory pressure switch setting.

\* Pressure switch adjustment needed.

+ 700248 pressure switch needed for extra high pressure switching.

Pump suction 1 1/2" BSP Female.

Pump discharge port 1" BSP Male (pump), 1" BSP Female (pressure kit).

Both single and three phase models available.

# JJ & OJ DEEP WELL PERFORMANCE TABLES

## JJ400 DEEP WELL PERFORMANCE TABLE

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	INJECTOR SIZE (INCH)	SUCTION PIPE (INCH)	PRESSURE PIPE (INCH)	BORE WATER PUMPING LEVEL OR SUCTION LIFT (M)								MIN. PUMP PRESS. (kPa)	MAX. PUMP PRESS. (kPa)	
					6	9	12	15	18	21	24	27			
					CAPACITY (LPM)										
D411	140-280	3 ¼	1 ¼	1	60	45	35	25	18					95	400
D521	140-280	3 ⅜	1 ½	1 ¼	75	65	50	40						100	400
D511	140-280	-	1 ½	1 ¼					25	20	18	13		100	385

## JJ600 DEEP WELL PERFORMANCE TABLE

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	INJECTOR SIZE (INCH)	SUCTION PIPE (INCH)	PRESSURE PIPE (INCH)	BORE WATER PUMPING LEVEL OR SUCTION LIFT (M)										MIN. PUMP PRESS. (kPa)	MAX. PUMP PRESS. (kPa)	
					6	9	12	15	18	21	24	27	30	34			37
					CAPACITY (LPM)												
D417	140-280	3 ¼	1 ¼	1	78	58	43									140	410
D413	140-280	-	1 ¼	1				30	25	18						140	430
D523	140-280	3 ⅜	1 ½	1 ¼	100	85	63	47								160	414

## OJ700 DEEP WELL PERFORMANCE TABLE

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	INJECTOR SIZE (INCH)	SUCTION PIPE (INCH)	PRESS. PIPE (INCH)	BORE WATER PUMPING LEVEL OR SUCTION LIFT (M)										MIN. PUMP PRESS. (kPa)	MAX. PUMP PRESS. (kPa)			
					6	9	12	15	18	21	24	27	30	34			37	40	
					CAPACITY (LPM)														
D414	210-350	3 ¼	1 ¼	1	90	78	60										186	455	
D415	210-350	-	-	1				40	30	28	18	15					186	483	
D514	210-350	3 ⅜	1 ½	1 ¼	120	105	75	63									179	469	
D515	210-350	-	-	1 ¼					50	40	30						193	483	
D516	210-350	-	-	-								28	20	13	10		193	455	
D611	210-350	#4 ⅜	-	-	135	120	113	90									179	462	
D612	210-350	-	2	1 ½					68	60	48						186	483	
D613	210-350	-	-	-									54	35	25	25	15	193	518

## OJ800 DEEP WELL PERFORMANCE TABLE

INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	INJECTOR SIZE (INCH)	SUCTION PIPE (INCH)	PRESS. PIPE (INCH)	BORE WATER PUMPING LEVEL OR SUCTION LIFT (M)										MIN. PUMP PRESS. (kPa)	MAX. PUMP PRESS. (kPa)					
					6	9	12	15	18	21	24	27	30	34			37	40	43	46	49
					CAPACITY (LPM)																
D520	210-350* or 280-480	3 ⅜	1 ½	1 ¼	160	135	113	85										248	573		
D518	210-350* or 280-480	-	-	-					63	58	43							262	690		
D519	210-350* or 280-480	-	-	-							38	30	23	18	15			262	656		
D618	210-350* or 280-480	#4 ⅜	-	-	205	173	150											214	517		
D619	210-350* or 280-480	-	2	1 ½				125	100	85								242	600		
D616	210-350* or 280-480	-	-	-						68	60	50						276	711		
D617	210-350* or 280-480	-	-	-									48	40	33	28	25	20	276	662	
D613	210-350	-	-	-										54	35	25	25	15	193	518	

## OJ700 & OJ800 DEEP WELL OFFSET TABLE

INJECTOR MODEL		PIPE SIZE (INCH)	ADDITIONAL SUCTION HEAD (M) PER HORIZONTAL OFFSET (M)					
OJ700	OJ800		30	60	120	180	240	300
D611		2 x 1 ½	3	6	9	12	15	17
D612		2 x 1 ½	2.5	4.5	7.5	10.5	13.5	15
D613		2 x 1 ½	2.5	4.5	7.5	10.5	12	13.5
D618		2 x 1 ½	6	12	18.5	23	26	29
D619		2 x 1 ½	4.5	9	15	18.5	21	23
D616	D616	2 x 1 ½	3	6	12	17	20	23
D617		2 x 1 ½	3	6	10.5	15	18.5	21
D618		2 x 2	3.5	7.5	13.5	18.5	21	24
D619		2 x 2	3	6	10.5	13.5	17	18.5
D616		2 x 2	2	4.5	7.5	10.5	13.5	15
D617		2 x 2	1.5	3	6	9	12	13.5



# JJ DEEP WELL

## WATER PRESSURE SYSTEMS

### JJ400 DEEP WELL HIGH PRESSURE

PRESSURE SWITCH SETTING (kPa)	OPERATING PRESSURE (kPa)	BORE WATER PUMPING LEVEL (M)														
		6	9	12	15	18	21	24	27	30	34	37	40	43	46	49
		CAPACITY (LPM) AT OR NEAR THE SEA LEVEL														
		INJECTOR D411					PUMP ONLY									
140-275	90	60	45	35	25	18										
140-275	120	45	35	25	18	5										
140-275	150	35	25	18	15	8										
210-345	180	25	18	15	8											
210-345	205	18	15	8												
210-345	240	15	8													
210-345	270	8														
		INJECTOR D521				INJECTOR D511				PUMP ONLY						
140-275	105	74	64	50	40	25	20	17	13							
140-275	140	64	50	40	25	20	17	13	7							
140-275	165	50	40	25	20	17	13	7								
210-345	195	40	25	20	17	13	7									
210-345	230	25	20	17	13	7										
275-415	255	20	17	13	7											
275-415	280	17	13	7												
275-415	315	13	7													
275-415	345	7														

### JJ600 DEEP WELL HIGH PRESSURE

PRESSURE SWITCH SETTING (kPa)	OPERATING PRESSURE (kPa)	BORE WATER PUMPING LEVEL (M)														
		6	9	12	15	18	21	24	27	30	34	37	40	43	46	49
		CAPACITY (LPM) AT OR NEAR THE SEA LEVEL														
		INJECTOR D417			INJECTOR D413			PUMP ONLY								
140-275	140	77	57	44	32	26	19									
140-275	165	57	44	32	26	19	11									
140-275	195	44	32	26	19	11	8									
210-345	230	32	26	19	11	8										
210-345	255	26	19	11	8											
275-415	280	19	11	8												
275-415	315	11	8													
275-415	345	8														
		345			INJECTOR D513				PUMP ONLY							
140-275	165	100	86	64	48	41	31	21	16							
140-275	195	86	64	48	41	31	21	16	8							
210-345	225	64	48	41	31	21	16	8								
210-345	255	48	41	31	21	16	8									
275-415	280	41	31	21	16	8										
275-415	315	31	21	16	8											
345-485	345	21	16	8												
345-485	370	16	8													
345-485	405	8														
		INJECTOR D620											PUMP ONLY			
140-275	165				52	46	40	33	25	21	18	14				
140-275	195			52	46	40	33	25	21	18	14	8				
210-345	225		52	46	40	33	25	21	18	14	8					
210-345	255	52	46	40	33	25	21	18	14	8						
275-415	280	46	40	33	25	21	18	14	8							
275-415	315	40	33	25	21	18	14	8								
345-550	345	33	25	21	18	14	8									
345-550	370	25	21	18	14	8										
345-550	405	21	18	14	8											
345-550	435	18	14	8												
345-550	460	14	8													
345-550	495	8														

# OJ DEEP WELL

## WATER PRESSURE SYSTEMS

### OJ700 DEEP WELL HIGH PRESSURE

PRESSURE SWITCH SETTING (kPa)	OPERATING PRESSURE (kPa)	BORE WATER PUMPING LEVEL (M)														
		6	9	12	15	18	21	24	27	30	34	37	40	43	46	49
		CAPACITY (LPM) AT OR NEAR THE SEA LEVEL														
		INJECTOR D414			INJECTOR D415				PUMP ONLY							
210-345	180	88	77	59	41	31	27	17	14							
210-345	205	77	59	41	31	27	17	14	8							
210-345	240	59	41	31	27	17	14	8								
210-345	270	41	31	27	17	14	8									
275-415	295	31	27	17	14	8										
275-415	330	27	17	14	8											
345-485	360	17	14	8												
345-485	385	14	8													
345-485	415	8														
		INJECTOR D514			INJECTOR D515			INJECTOR D516			PUMP ONLY					
210-345	195	122	98	76	63	51	42	31	27	20	14	11				
210-345	225	98	76	63	51	42	31	27	20	14	11	9				
210-345	255	76	63	51	42	31	27	20	14	11	9	8				
275-415	280	63	51	42	31	27	20	14	11	9	8					
275-415	315	51	42	31	27	20	14	11	9	8						
345-485	345	42	31	27	20	14	11	9	8							
345-485	370	31	27	20	14	11	9	8								
345-550	405	27	20	14	11	9	8									
345-550	435	20	14	11	9	8										
415-620	460	14	11	9	8											
415-620	495	11	9	8												
415-620	525	9	8													
415-620	550	8														
		INJECTOR D611			INJECTOR D612			INJECTOR D613				PUMP ONLY				
210-345	195	136	123	111	91	67	60	47	42	35	26	21	16			
210-345	225	123	111	91	67	60	47	42	35	26	21	16	8			
210-345	255	111	91	67	60	47	42	35	26	21	16	8				
275-415	280	91	67	60	47	42	35	26	21	16	8					
275-415	315	67	60	47	42	35	26	21	16	8						
345-485	345	60	47	42	35	26	21	16	8							
345-485	370	47	42	35	26	21	16	8								
345-550	405	42	35	26	21	16	8									
345-550	435	35	26	21	16	8										
415-620	460	26	21	16	8											
415-620	495	21	16	8												
480-690	525	16	8													
480-690	550	8														

### AREAS LABELLED "PUMP ONLY"

Duty points in the areas labelled "Pump Only" use the same injectors as the closest shaded duty. This is the highest pressure injector available for the pump. The pump can be used at this duty for water transfer and similar applications, but cannot be used as a water pressure system (i.e. pump stopped by a pressure switch at cut-out pressure).

This is for the following reasons:

1. The cut-in pressure must be kept high enough so that the injector will function correctly at the required depth.

2. The differential between cut-in pressure and cut-out pressure at the pressure switch needs to be close to 140kPa (minimum) for reliable pressure switch operation. This means that the cut-out pressure must be at least 140kPa above the cut-in pressure.
3. As the suction depth increases, the top head that can be developed by the pump decreases. In the extreme case (areas labelled "Pump Only"), this top head is below cut-out pressure, and the pump will not switch off.

In these cases, your system may use level sensors (e.g float switch, probes or pressure sensor) or flow sensors to shut off the pump.

# OJ DEEP WELL

## WATER PRESSURE SYSTEMS

### OJ800 DEEP WELL HIGH PRESSURE

PRESSURE SWITCH SETTING (kPa)	OPERATING PRESSURE (kPa)	BORE WATER PUMPING LEVEL (M)															
		6	9	12	15	18	21	24	27	30	34	37	40	43	46	49	
		CAPACITY (LPM) AT OR NEAR THE SEA LEVEL															
		INJECTOR D520			INJECTOR D518				INJECTOR D519				PUMP ONLY				
275-415	255	161	136	113	85	62	57	43	38	31	23	19	14				
275-415	280	136	113	85	62	57	43	38	31	23	19	14	11				
345-485	315	113	85	62	57	43	38	31	23	19	14	11	8				
345-485	345	85	62	57	43	38	31	23	19	14	11	8					
345-485	370	62	57	43	38	31	23	19	14	11	8						
415-620	405	57	43	38	31	23	19	14	11	8							
415-620	435	43	38	31	23	19	14	11	8								
480-690	460	38	31	23	19	14	11	8									
480-690	495	31	23	19	14	11	8										
480-690	525	23	19	14	11	8											
550-760	550	19	14	11	8												
550-760	585	14	11	8													
550-760	615	11	8														
550-760	640	8															
		INJECTOR D618			INJECTOR D619			INJECTOR D616			INJECTOR D617						
275-415	205	205	172	152	125	101	84	68	60	50	46	40	33	29	25	21	
275-415	240	172	152	125	125	101	84	68	60	50	46	40	33	29	25	21	
275-415	270	152	125	125	101	84	68	68	60	50	46	40	33	29	25	21	
275-415	295	125	125	101	84	68	68	60	50	46	40	33	29	25	21	10	
275-415	330	125	101	84	68	68	60	50	46	40	33	29	25	21	10		
345-485	360	101	84	68	68	60	50	46	40	33	29	25	21	10			
345-485	385	84	68	68	60	50	46	40	33	29	25	21	10				
415-620	415	68	68	60	50	46	40	33	29	25	21	10					
415-620	450	68	60	50	46	40	33	29	25	21	10						
480-690	475	60	50	46	40	33	29	25	21	10							
480-690	510	50	46	40	33	29	25	21	10								
550-760	535	46	40	33	29	25	21	10									
550-760	565	40	33	29	25	21	10									PUMP ONLY	
550-760	590	33	29	25	21	10											
550-760	620	29	25	21	10												
550-760	625	25	21	10													
690-895	690	21	10														
690-895	715	10															

# COMPOSITE FARMMASTER

onga®

## 543 JET PUMP

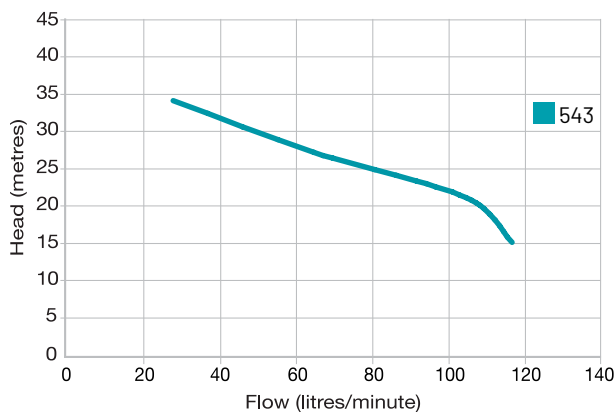


### KEY FEATURES

- ◆ Industrial grade corrosion-resistant thermoplastic.
- ◆ No moving parts down bore.
- ◆ Built-in check valve.
- ◆ Shallow well lifts to 7.6m.
- ◆ Manual or automatic system.
- ◆ Max. head - 41m.
- ◆ Max. flow - 118lpm.

### APPLICATIONS

For domestic, industrial or rural use as a manual or an automatic pressure system. Stock watering, irrigation and water transfer from a large range of water sources including tanks, bores, dams, creeks and rivers.



MODEL	PRESS. SWITCH SETTING (kPa)	SUCTION LIFT (M)	DISCHARGE HEAD (M)					MAX. PUMP PRESS. (kPa)
			15	21	27	34	40	
543	210-350	0	117	105	65	28	390	
		3	94	84	52	22	360	
		6	67	60	37	16	330	
		7.6	47	42	26	11	315	



# SUITABLE PRESSURE TANKS

Each pressure tank in the Onga range is constructed to store water under pressure to minimise pump cycling and running costs and to maximise pump life. To size the tank, determine the pumps pressure switch setting then choose a tank with the draw off you require at that setting.

## DRAW OFF IN LITRES

PRESSURE SWITCH SETTINGS kPa	AQUAPACK PLUS					
	APP8	APP12	APP24	APP40	APP80	APP100
100-200	2.5	3.8	7.6	12.7	25.3	31.7
140-275	2.7	4.1	8.1	13.6	27.1	33.9
210-340	2.2	3.3	6.6	11.0	22.0	27.5
275-415	2.0	3.0	6.0	10.1	20.2	25.2
275-450	2.4	3.5	7.1	11.8	23.6	29.5
345-550	2.3	3.5	7.0	11.6	23.3	29.1
410-620	2.1	3.2	6.4	10.7	21.5	26.8
480-690	12.0	2.9	5.9	-	-	-
<b>CAPACITY (LITRES)</b>	8	12	24	40	80	100
<b>MAX. RATING (kPa)</b>	690			600		
<b>DIAMETER (CM)</b>	19	22	30	38	38	38
<b>HEIGHT (CM)</b>	23	33	41	53	72	91
<b>BSP</b>	1" M					
<b>WEIGHT (KG)</b>	2.35	3.2	5.5	10.4	14.3	20.0



PRESSURE SWITCH SETTINGS kPa	PRO-SOURCE FIBREWOUND						
	APSC -14-4-01	APSC -20-6-01	APSC -30-9-01	APSC -48-14-01	APSC -60-20-01	APSC -85-25-01	APSC -119-35-01
138-275	18.7	25.5	38.1	60.5	77.2	111.5	154
207-345	16.5	22.5	33.5	53.5	68.1	98.5	135.9
275-414	14.3	19.5	29.1	46.3	59.0	85.3	117.8
<b>CAPACITY (LITRES)</b>	55	75	112	178	227	328	453
<b>MAX. RATING (kPa)</b>	690						
<b>DIAMETER (CM)</b>	41		61	53	61		
<b>HEIGHT (CM)</b>	71.6	86.6	117.6	112.8	166.4	145.3	191.5
<b>BSP</b>	1" M			1 1/4" M			
<b>WEIGHT (KG)</b>	9.6	11.5	14	23.6	27.7	34.5	42.7



The volume of draw off required is determined by the size of the pump and the application. For applications where demand is generally lower than the pump's capacity, a larger tank is required to minimise cycling. For applications where the demand is evenly matched to the pump's output, a smaller tank will suffice.

## FOR EXAMPLE:

Stock troughs may have a peak demand period whereby the pump will run constantly and in non-peak demand times, the pump is only topping up troughs or responding to leaking ball valves. A larger tank is desirable so as to use the stored pressure rather than having the pump cycling.

When the pump is connected to a sprinkler system, which has a constant demand, only the minimum tank size is required.

## Note:

- Always size the tank to the smallest demand of the pump.
- It is impossible to have a pressure tank that is 'too big.'

# TECHNICAL DATA

## WATER PRESSURE PUMPS

### MATERIALS OF CONSTRUCTION

COMPONENT	MODEL				
	543	JJ400	JJ600	OJ700	OJ800
<b>PUMP CASING</b>	NORYL	CAST IRON	CAST IRON	CAST IRON	CAST IRON
<b>IMPELLER</b>	POLYCARB GF	POLYCARB GF	POLYCARB GF	POLYCARB GF	POLYCARB GF
<b>BAFFLE</b>	NORYL	ABS GF	NORYL	NORYL	NORYL
<b>END SHIELD</b>	CAST IRON	CAST IRON	CAST IRON	CAST IRON	CAST IRON
<b>SHAFT SLEEVE</b>	NYLON	NYLON	NYLON	NYLON	STAINLESS STEEL
<b>MOTOR SHAFT</b>	Mild Steel	Mild Steel	Mild Steel	Mild Steel	Mild Steel
<b>MOTOR SHELL</b>	CAST IRON	ALUMINIUM	CAST IRON	CAST IRON	CAST IRON
<b>O-RING'S</b>	NITRILE	NITRILE	NITRILE	NITRILE	NITRILE

### MOTOR DATA

	MODEL						
	543	JJ400	JJ600	JJ600 3PH	OJ700	OJ700 3PH	OJ800
<b>TYPE</b>	TEFC 2 POLE CONTINUOUSLY RATED THERMALLY PROTECTED						
<b>NOMINAL SPEED</b>	2900 RPM						
<b>IP RATING</b>	IP44	IP55	IP44				
<b>INSULATION CLASS</b>	CLASS B						
<b>TEMPERATURE RISE</b>	CLASS B						
<b>FREQUENCY</b>	50HZ						
<b>BEARING TEMP. RATING</b>	100 °C						

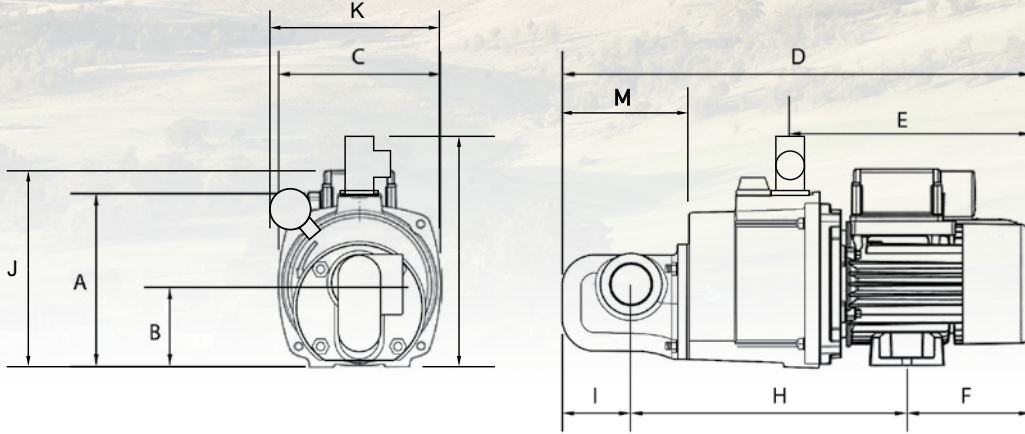
### MODEL DATA

	MODEL							
	543	JJ400	JJ600	JJ600 3PH	OJ700	OJ700 3PH	OJ800	OJ800 3PH
<b>SUPPLY VOLTAGE</b>	230			415	230	415	230/480	415
<b>PHASE</b>	1			3	1	3	1	3
<b>MOTOR INPUT POWER (P1) (KW)</b>	1.4	1	1.4	1.5	2		3.6	3.4
<b>STARTING CURRENT (AMPS)</b>	42	19	42	27	42	27	76	48
<b>FULL LOAD CURRENT (AMPS)</b>	6.4	4.5	6.4	2.6	8.5	3.6	14-Jul	5.7
<b>POWER SUPPLY LEAD (AMPS)</b>	10			H07RN-F 4G1.5mm <sup>2</sup> x2m	10	H07RN-F 4G1.5mm <sup>2</sup> x2m	15-Jan	H07RN-F 4G1.5mm <sup>2</sup> x2m
<b>PUMP WEIGHT (KG)</b>	25	18	31		40		50	
<b>PACKED WEIGHT (KG)</b>	27	19	33		42		58	
<b>OUTLET (BSP)</b>	3/4' FEMALE				1' FEMALE			
<b>CARTON DIMENSIONS (LxWxH mm)</b>	590x300x330				560x350x450		670x480x470	

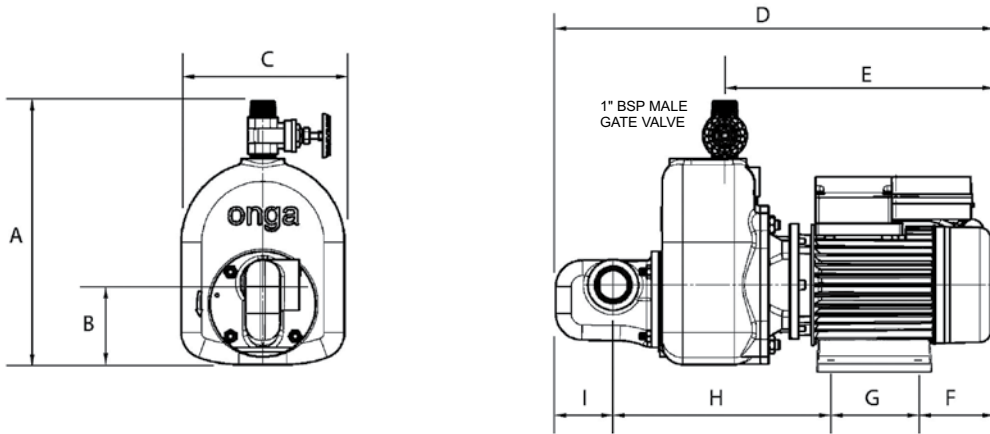
# DIMENSIONS DATA

## WATER PRESSURE PUMPS

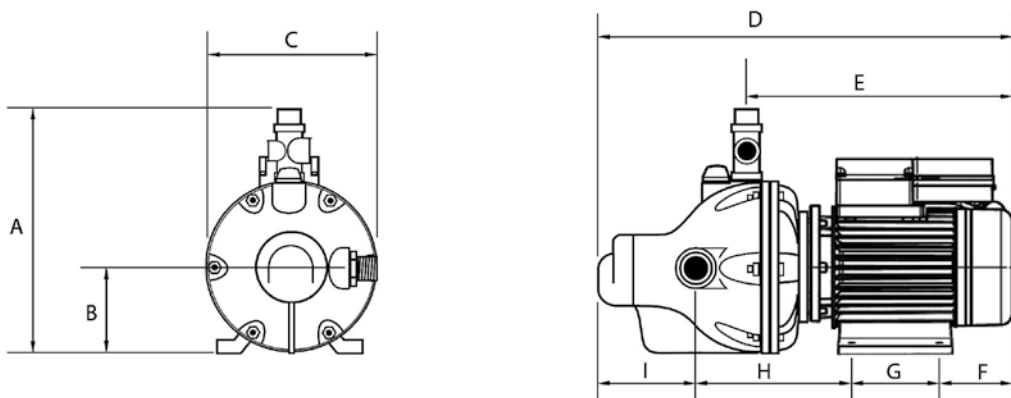
### JJ400 & JJ600 - SHALLOW WELL CONFIGURATION



### OJ700 & OJ800 - SHALLOW WELL CONFIGURATION



### 543



### DIMENSIONS TABLE

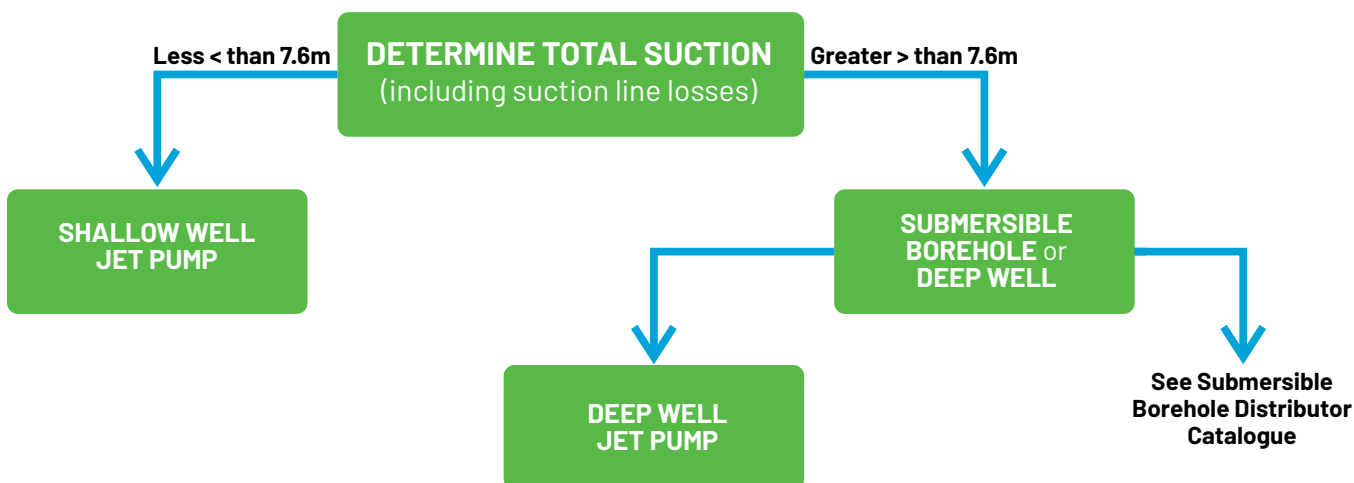
MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M
JJ400	190	90	180	525	255	140	NA	305	80	220	NA	NA	NA
JJ600 (1PH)	210	105	210	540	335	110	NA	350	80	265	220	285	135
JJ600 (3PH)	210	105	210	560	350	125	NA	355	80	245	220	285	135
OJ700 (1PH)	350	110	220	575	365	110	NA	285	80				
OJ700 (3PH)	350	110	220	590	380	125	100	285	80				
OJ800 (1PH)	350	110	280	640	410	120	140	300	80				
OJ800 (3PH)	350	110	280	640	420	125	140	300	80				
543	290	100	230	530	330	110	100	205	115				

# HOW TO SELECT & INSTALL CONVERTIBLE JET PUMPS

## WATER PRESSURE PUMPS

The Onga Farmmaster range comprises of four rugged cast iron pumps (JJ and OJ), and one non-corrosive moulded jet pump (543).

The JJ and OJ range are highly adaptable to your customer's particular site and water requirements. This also means that inexpensive adjustments can be made to the pump on site to fine tune its operation.



### CUSTOMER SITE DATA:

- Water depth. This added to friction losses through footvalve and suction lines give total suction head (0-7.6m)
- Discharge head pressure required (m or kPa) - This includes pressure required by the application, friction loss from delivery to usage points, and height differences.
- Volume required (l/m)

Using the Shallow Well Jet Pump selection tables (pages 6 -7), select the pump and injector combination that delivers the right flow at the design suction and delivery heads.



Select a pressure tank of at least the volume suggested on page 18. A larger tank can reduce pump cycling and operating cost.



Install the pump with foot valve or check valve, suction line, injector and pressure tank. Adjust the pressure switch to suit the application and injector fitted.

Deep Well Jet Pumps are more suitable than submersible pumps where the following conditions may exist:

**Depths down to 49 metres, corrosive water, sandy water, low or variable flow rates.**

### CUSTOMER SITE DATA:

- Water depth. Suction pipe sizes are given for each injector, and performance shown in the tables takes this friction loss into account.
  - Discharge head pressure required (m or kPa) - This includes pressure required by the application, friction loss from delivery to usage points, and height differences.
- Total delivery head must be converted to kPa.

Using the Deep Well Jet Pump selection tables (pages 8 -11), select the pump and injector combination that delivers the right flow at the design suction and delivery heads. The operating pressure must be maintained above the minimum injector pressure. See next page for more details.



Select a pressure tank of at least the volume suggested on page 18. A larger tank can reduce pump cycling and operating cost.

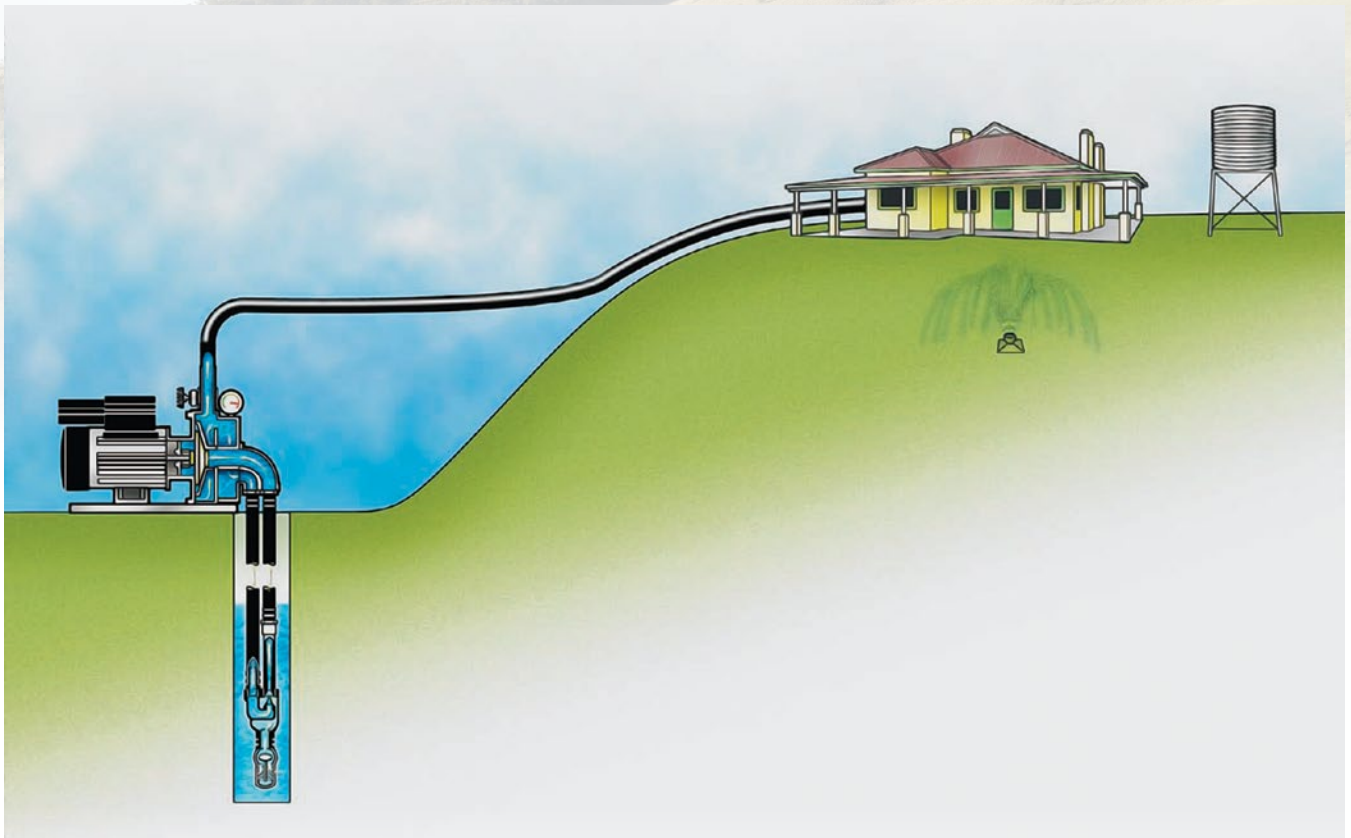


Install the pump and injector using correctly sized pipes. The injector must be installed at least 3m below water level. Adjust the pressure switch to suit the application and injector fitted. Adjust the gate valve to ensure that minimum operating pressure is maintained.



# FARMMASTER

## PUMP SELECTION GUIDE



Electricity Power .....

Capacity .....

### SUCTION

Static Head .....

Pipe Friction .....

**Total Suction Head** .....

### DELIVERY

Static Head .....

Pipe Friction .....

Discharge Pressure .....

**Total Delivery Head** .....

### TOTAL HEAD

Total Suction Head .....

Total Delivery Head .....

**Total Head** .....

### A. For what purpose do you require a water pump?

(Tick boxes as appropriate)

- Household water pressure
- Garden watering/sprinklers
- Stock water supply
- Hosing down
- Tank filling
- Other (specify) .....

### B. Total flow required (if known)

..... litres/min

Alternatively: Total No. of taps to be serviced at one time .....

### C1. From what source of supply is the water to be drawn?

- River, Creek or Channel
- Dam
- Rainwater tank above ground
- Underground tank
- Bore

### C2. If Bore

State inside diameter of casing ..... mm

Depth ..... metres

State if water supply is clean, muddy or gritty.

### C3. If water is to be drawn from bore:

State quantity of water bore will deliver ..... litres/min.

From what constant depth ..... metres

# FARMMASTER

## ORDERING INFORMATION

Onga Farmmaster pumps are sold in component form to maximise their ability to tailor to individual requirements. Ordering is a three step process.

- STEP 1 - Identify the pump required.**
- STEP 2 - Identify the injector selected.**
- STEP 3 - Identify the pressure tank required.**

• STEP 1 - SELECT PUMP MODEL									
PUMP MODEL									
JJ400		JJ600		OJ700		OJ800		543#	
JJ400 1PH	110031	JJ600 1PH	110021	OJ700 1PH	110144	OJ800 1PH	110121	543 1PH	354300
-	-	JJ600 3PH	110044	OJ700 3PH	110119	OJ800 3PH	110124	-	-
# Injector included, go to step 3									
• STEP 2 - CHOOSE INJECTOR									
SHALLOW WELL INJECTORS									
JJ400		JJ600		OJ700		OJ800			
MODEL	PART NO.	MODEL	PART NO.	MODEL	PART NO.	MODEL	PART NO.		
S500	110445	S600	110448	OJ700	110119	S800	110476		
S501	110446	S601	110449	S700	110471	S801	110477		
S502	110447	S602	110450	S701	110472	S802	110478		
		S603	110451	S702	110473	S803	110479		
				S703	110474	S804	110480		
				S704	110475	S805	110481		
						S806	110482		
DEEP WELL INJECTORS									
JJ400		JJ600		OJ700		OJ800			
MODEL	PART NO.	MODEL	PART NO.	MODEL	PART NO.	MODEL	PART NO.		
D411	D411E	D417	D417E	D414	D414E	D520	D520E		
D512	D512E	D413	D413E	D415	D415E	D518	D518E		
D511	D511E	D523	D523E	D514	D514E	D519	D519E		
		D513	D513E	D515	D515E	D618	D618E		
		D620	D620E	D516	D516E	D619	D619E		
				D611	D611E	D616	D616E		
				D612	D612E	D617	D617E		
				D613	D613E				
Part numbers are for kits with over bore flange. For offset flange replace "E" with "O" on the part number.									
• STEP 3 - CHOOSE PRESSURE TANK									
AQUAPACK PLUS									
MODEL	APP8	APP12	APP24	APP40	APP80	APP100			
PART NO.	110491	110492	110493	110494	110495	110496			
PRO-SOURCE FIBREWOUND									
MODEL	FW14	FW20	FW30	FW48	FW60	FW85	FW119		
PART NO.	APSC-14-4-01	APSC-20-06-01	APSC-30-9-01	APSC-48-14-01	APSC-60-20-01	APSC-85-25-01	APSC-119-35-01		

# TROUBLESHOOTING FARMMASTER WATER PRESSURE PUMPS

## ALL MODELS

SYMPTOM	CAUSE	REMEDY
<b>NO WATER</b>	Pump not running	Check power supply.
	Gate valve closed	Open gate valve.
<b>WILL NOT PRIME</b>	Foot valve leaking	Check foot valve for seal, fix or replace.
	Air lock	Check suction line for humps. Prime with engine drive pump to score air from lines.
	Wrong injector for application	Re-evaluate site for pressure and flow requirements. Select an injector that will provide enough pressure at the required flow rate.
	Water source has been drawn down so that suction is above water line	Check suction is submerged.
	Pressure switch cut in pressure too low	Reset pressure switch cut in pressure.
<b>LOW FLOW / LOW PRESSURE</b>	See above - "No Water"	See above - "No Water".
	Cavitation	Close gate valve to increase pressure to above minimum operating pressure of selected injector.
	Pipe work sizing	Check pipe work pressure losses and replace with larger pipe if needed.
<b>RAPID CYCLING</b>	Pressure tank too small	Fit a larger or secondary pressure tank.
	Pressure tank has incorrect pressure	Check pressure and adjust to 10% below cut in pressure of the pump.
	Pressure switch setting incorrect	Adjust pressure switch and tank pressure.
	Pump injector combination too large for application	Re-evaluate site requirements.
<b>PUMP DOES NOT SHUT OFF</b>	Pump not reaching cut out pressure	See above "Low Flow/Low Pressure".
	Pressure switch settings	Adjust pressure switch settings to suit application.
	Leak in piping	Check discharge supply lines for leaks.



Before carrying out any kind of maintenance or work in or out of the water, disconnect the pump from the mains. If the connection plug or power outlet is wet, isolate that circuit at the metre board. Model JJ600 may be purchased as single or three phase.

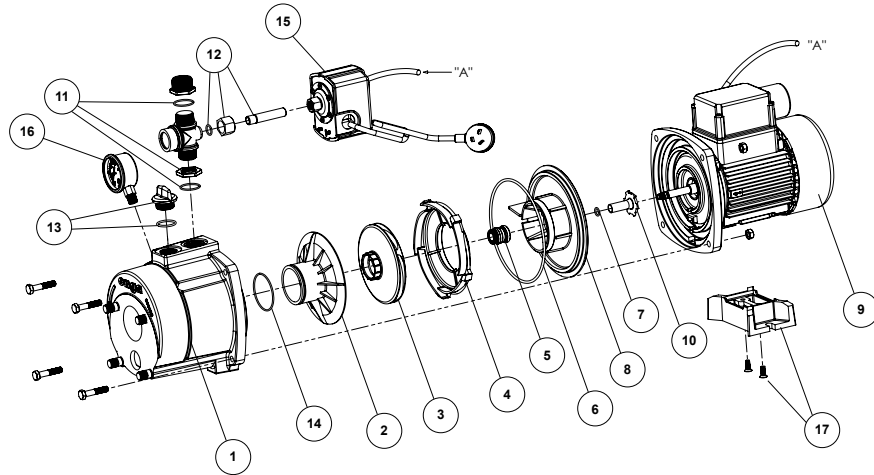


The pump must be protected by an earth leakage circuit breaker with a breaking current of 30milliamps ( $I_{\Delta n} < 30\text{mA}$ )

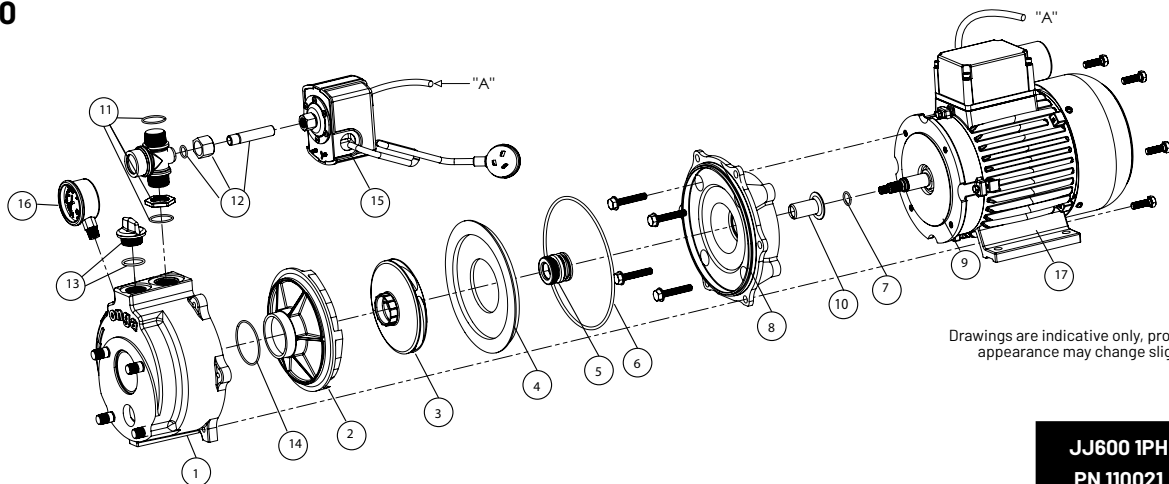
- ◆ Isolate pump electrically before performing maintenance.
- ◆ Ensure power supply is locked out while you are working on that circuit.
- ◆ Check power is disconnected using a meter
- ◆ Check capacitors for stored charge
- ◆ Release system pressure before disconnecting fittings
- ◆ Use appropriate lifting equipment when moving these pumps.

# SPARE PARTS FARMMASTER WATER PRESSURE PUMPS

## JJ400



## JJ600



Drawings are indicative only, product appearance may change slightly.

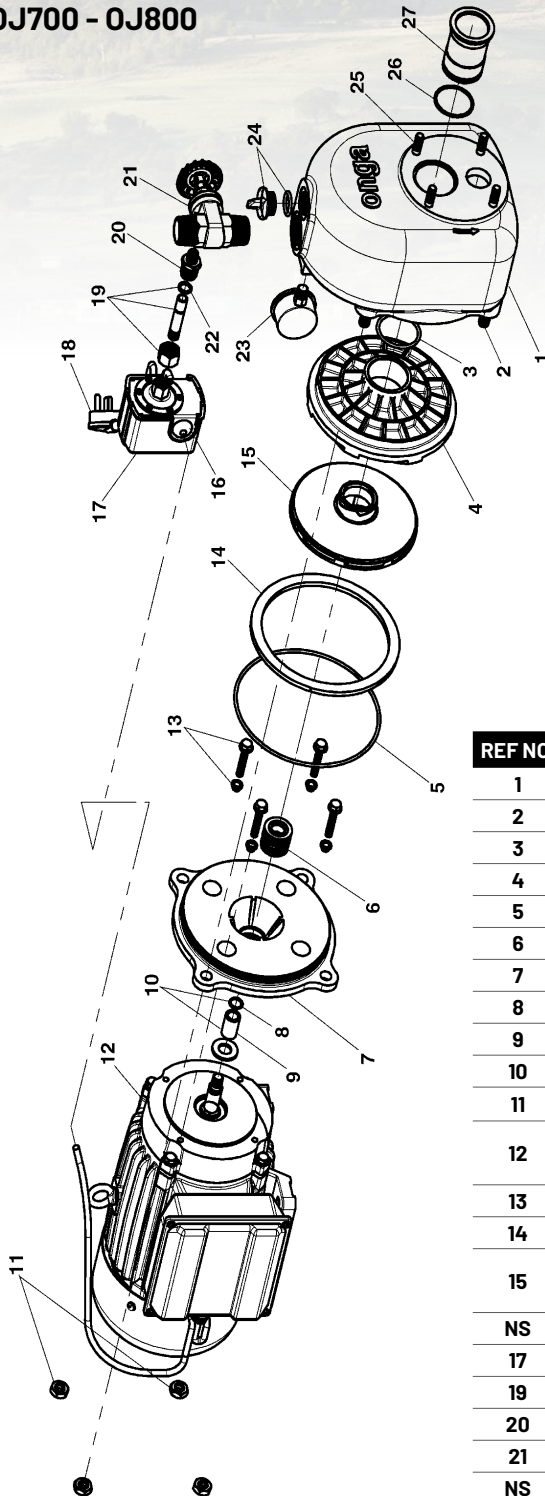
		JJ400 PN 110031	
REF NO.	COMPONENT DESCRIPTION	PART NO.	
1	CASING	800560	1PC
2	SEPARATOR PLATE	404611	1PC
3	IMPELLER	504893K	1PC
4	DIFFUSER	302190K	1PC
5	SEAL KIT (INC. 5, 6 & 10)	800582K	1PC
5a	SEALS (PK 25)	800901	1PC
6	O-RING CASING	702206K	1PC
7	O-RING SLEEVE	-	-
8	BAFFLE	302060K	1PC
9	MOTOR	800442	1PC
10	SHAFT SLEEVE KIT (7 & 9)	800894K	1PC
11	TEE ASSEMBLY	800277	1PC
12	P/SWITCH MOUNTING ASSY.	801237	1PC
13	PRIMING PLUG & O-RING	800017K	1PC
14	O-RING INJECTOR (PK/5)	702210K	1PC
15	PRESSURE SWITCH	700244	-
16	PRESSURE GAUGE	700240	1PC

		JJ600 1PH PN 110021	
		JJ600 3PH PN 110044	
REF NO.	COMPONENT DESCRIPTION	PART NO.	
1	CASING	800002	1PC
2	DIFFUSER	402810K	1PC
3	IMPELLER (SINGLE PHASE)	506333K	1PC
	IMPELLER (THREE PHASE)	506339K	
4	BAFFLE	403231	1PC
5	SEAL KIT (INC. 5, 6 & 10)	800890K	1PC
5a	SEALS (PK 25)	800900	1PC
6	O-RING CASING	700206K	1PC
7	O-RING SLEEVE	-	-
8	YOKE	402400GN	1PC
9	MOTOR (1 PHASE)	800445	1PC
	MOTOR (3 PHASE)	800447	
10	SHAFT SLEEVE KIT (7 & 10)	800895K	1PC
11	TEE ASSEMBLY	800277	1PC
12	P/SWITCH MOUNTING ASSY.	801237	1PC
13	PRIMING PLUG & O-RING	800017K	1PC
14	O-RING INJECTOR (PK/5)	702210K	1PC
15	PRESSURE SWITCH	700244	1PC
16	PRESSURE GAUGE	700240	1PC



# SPARE PARTS FARMMASTER WATER PRESSURE PUMPS

OJ700 - OJ800



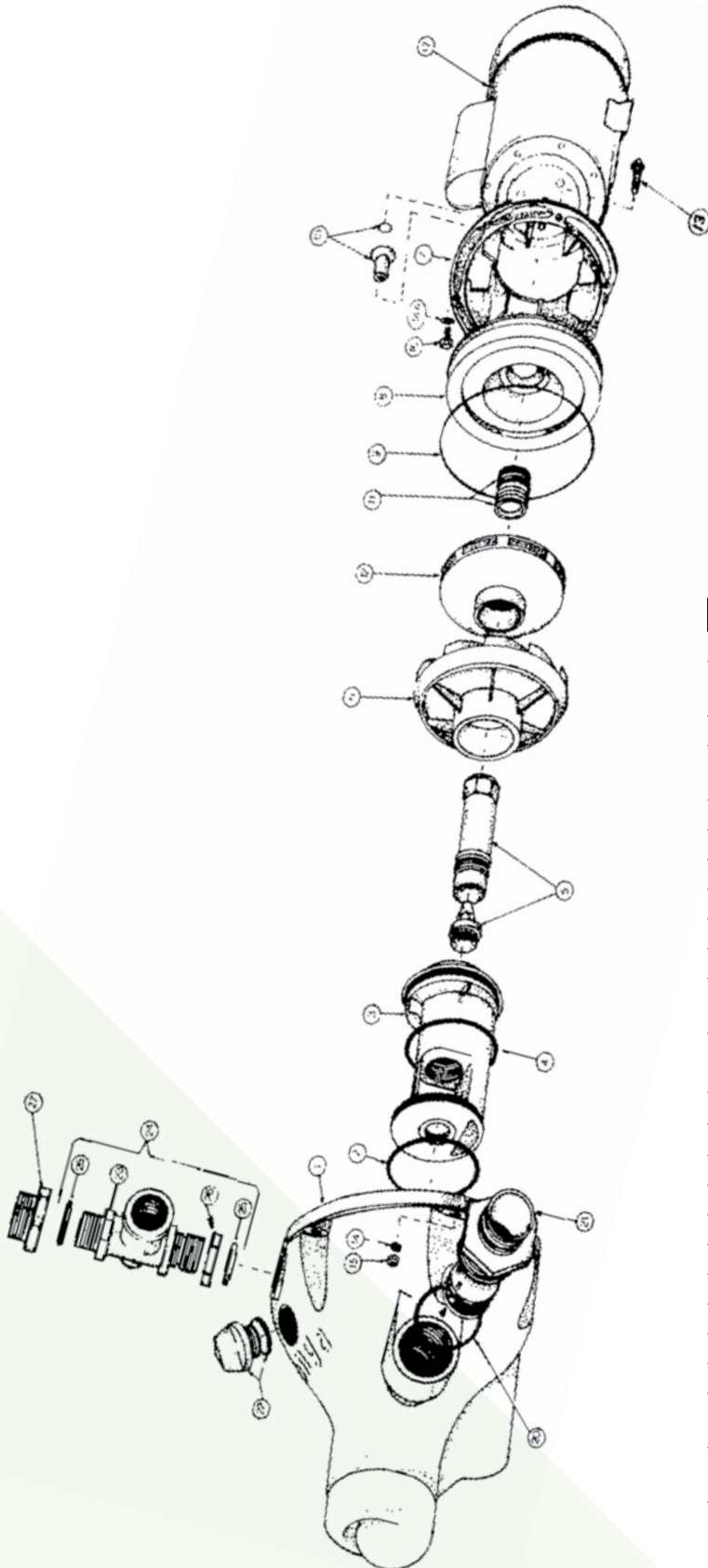
Drawings are indicative only, product appearance may change slightly.

<b>OJ700 1PH PN 110144</b>	<b>OJ800 1PH PN 110121</b>
<b>OJ700 3PH PN 110119</b>	<b>OJ800 3PH PN 110124</b>

REF NO.	COMPONENT DESCRIPTION	PART NO.	PART NO.
1	CASING & STUDS ASSY.	800080 1PC	800080 1PC
2	CASING STUD (PK 10)	800113 4PC	800113 4PC
3	O'RING DIFFUSER (PK 5)	700219K 1PC	700219K 1PC
4	DIFFUSER	301431K 1PC	401580K 1PC
5	O'RING CASING	702165K 1PC	702165K 1PC
6	SEAL KIT (INC. SEAL + 9 & 10)	800890K 1PC	800890K 1PC
7	YOKE	301270GN 1PC	301270GN 1PC
8	O'RING SHAFT SLEEVE (PK 5)	702200K 1PC	702200K 1PC
9	SHAFT SLEEVE	- 1PC	- 1PC
10	SHAFT SLEEVE ASSY. (INC. 8 & 9)	800895K 1PC	801007K 1PC
11	NUT (PK 12)	800093K 4PC	800093K 4PC
12	MOTOR - 1Ø	800445 1PC	800446 1PC
	MOTOR - 3Ø	800447 1PC	800449 1PC
13	BOLT (PK 12)	800242K 4PC	800242K 4PC
14	BAFFLE	401322 1PC	401323 1PC
15	IMPELLER - 1PH	506480K 1PC	500070K 1PC
	IMPELLER - 3PH	506489K 1PC	500079K 1PC
NS	IMPELLER NUT (3PH)	603250 1PC	603250 1PC
17	PRESSURE SWITCH ASSY. (INC. LEAD)	801457 1PC	801449 1PC
19	MOUNTING ASSY.	800236K 1PC	800236K 1PC
20	MOUNTING NIPPLE	503510 1PC	503510 1PC
21	GATE VALVE	500490 1PC	500490 1PC
NS	TEE - 1" BSP BRASS	700280 1PC	700280 1PC
22	O'RING - MOUNTING ASSY.	702172 1PC	702172 1PC
23	PRESSURE GAUGE	700240 1PC	700240 1PC
24	PRIMING PLUG & O'RING	800017K 1PC	800017K 1PC
25	STUD (PK 10)	800114 4PC	800114 4PC
26	O'RING - SPIGOT (PK 5)	702210K 1PC	702210K 1PC
27	SPIGOT	507011 1PC	507011 1PC
NS	HOUSING BARESHAFT ASSY.	800221 1PC	800221 1PC

# SPARE PARTS FARMMASTER WATER PRESSURE PUMPS

543



543  
PN  
354300

REF NO.	COMPONENT DESCRIPTION	PART NO.	
1	CASING	301190	1PC
2	O'RING - INJECTOR HOUSING (FRONT)	702185K	1PC
3	HOUSING - INJECTOR	301200	1PC
4	O'RING - INJECTOR HOUSING (REAR)	700204K	1PC
5	JET & VENTURI	801152	1PC
6	DIFFUSER	402810K	1PC
7	YOKE	301180	1PC
8	BAFFLE	402301K	1PC
9	O'RING - CASING	702184K	1PC
10	SHAFT SLEEVE & O'RING	800895K	1PC
10B	O'RING - SHAFT SLEEVE (PACK OF 10)	702218K	1PC
11	SEAL KIT	800583	1PC
	SEAL (PACK OF 25)	800900	1PC
12	IMPELLER	506333K	1PC
13	COACH BOLT (SET OF 10)	800254	6PC
14	WASHER (SET OF 20)	800151	6PC
15	NUT (SET OF 12)	702025K	6PC
17	MOTOR - 1PH	800445	1PC
18	BASE & SCREWS KIT	NLA	1PC
19	SCREW (SET OF 10)	NLA	2PC
20	O'RING (PACK OF 5)	702182K	1PC
21	NIPPLE & CLACKER ASSY	800296K	1PC
22	PRIMING PLUG & O'RING	800017K	1PC
23	TEE - THREADED DISCHARGE	NLA	1PC
24	TEE ASSEMBLED - THREADED DIS.	800277	1PC

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