

 PENTAIR

ONGA®



# FARM MASTER

DISTRIBUTOR CATALOGUE



# FARMMASTER

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# FARMMASTER

## BENEFITS - NOMENCLATURE

Onga's Farmmaster range of pumps has evolved with the needs of Australian farmers and landowners since Onga's beginning in 1967. They have benefited from over 45 years of outstanding pump engineering.

The Farmmaster Range offers precision engineered internals with coated cast iron construction for high performance, lower running costs and the ultimate in strength and longevity. Containing a totally enclosed fan cooled motor, you simply can't beat this range for reliability. Available in shallow and deep well configurations:

### Shallow Well Pumps

Onga offers a wide variety including the 500 series, JJ and OJ range of reliable shallow well pumps suitable for providing strong and constant pressure throughout.

### 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.

*Your Onga dealer can tailor these strong and versatile pumps to your particular requirements, using interchangeable internal components delivering you the efficiency you demand.*

### PRODUCT FEATURES

- Simple to install and commission.
- Full range of injectors.
- Large range of injector types.
- Offset combinations available.
- No moving parts down bore.
- Manual or automatic system.

### CUSTOMER BENEFITS

- Low cost, fast hassle free installation.
- Can be engineered to meet needs of each job.
- Adaptable to deep or shallow well applications.
- Can place pump above flood line.
- Low maintenance costs.
- Available to suit your specific application



Nomenclature	JJ	OJ	MOULDED JET
PUMPS	Junior Jet	Onga Jet	
SERIES No	400 - 600 - 700 - 800		543 - 544
INJECTORS	S - Shallow well		
	D - Deep well		

# PERFORMANCE

# JJ SHALLOW WELL WATER PRESSURE SYSTEMS



JJ400

SUITABLE INJECTORS

S500

S501

S502

JJ600

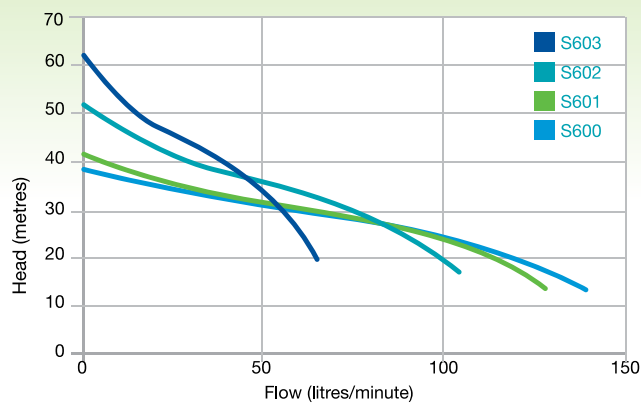
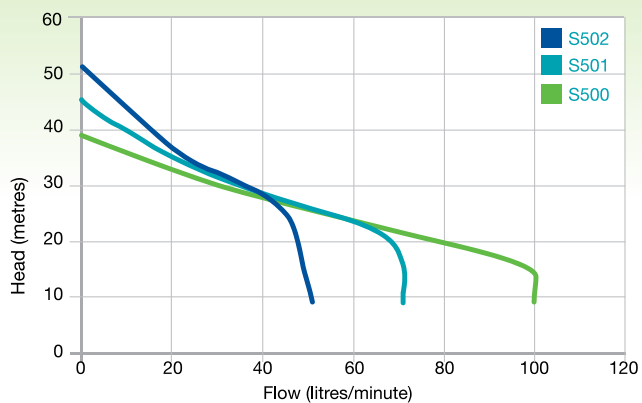
SUITABLE INJECTORS

S600

S601

S602

S603



# PERFORMANCE

# OJ SHALLOW WELL WATER PRESSURE SYSTEMS



## OJ700

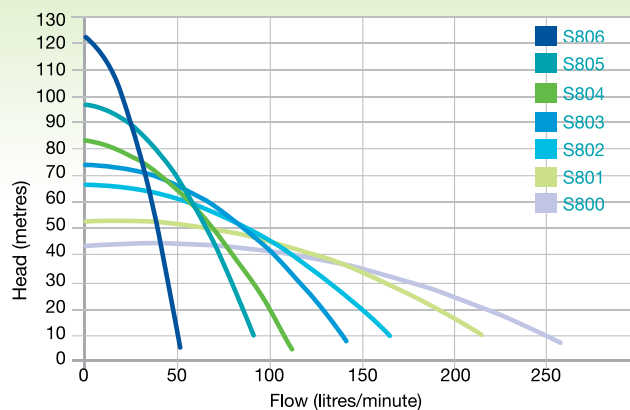
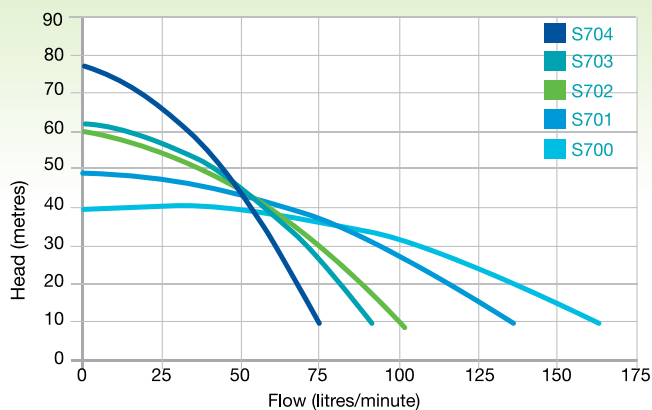
### SUITABLE INJECTORS

S700
S701
S702
S703
S704

## OJ800

### SUITABLE INJECTORS

S800
S801
S802
S803
S804
S805
S806



- Product images shown are for reference purposes only and may not represent actual product(s).

# PERFORMANCE TABLE

# JJ SHALLOW WELL WATER PRESSURE SYSTEMS

JJ400 Shallow well	INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION LIFT (M)	DISCHARGE HEAD (M)						MAXIMUM PUMP PRESSURE (kPa)
				15	21	27	34	40	46	
				CAPACITY (LPM)						
JJ400 Shallow well	S500*	140-280	0	98	70	40				380
			3	78	56	32				350
			6	56	40	23				320
			7.6	39	28	16				305
	S501#	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
	S502*	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 Shallow well	S600*	140-280	0	137	112	71	24			375
			3	109	89	57				345
			6	78	64	40				315
			7.6	55	45	28				300
	S601#	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
	S602*	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
S603*	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 (210-350 kPa)

\*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.



# PERFORMANCE TABLE

# OJ SHALLOW WELL WATER PRESSURE SYSTEMS

OJ700 Shallow well	INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION LIFT (M)	DISCHARGE HEAD (M)												MAXIMUM PUMP PRESSURE (kPa)		
				15	21	27	34	40	46	52	58	64	70	76	82		88	95
				CAPACITY (LPM)														
S700#	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
S701*	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
S702*	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
S703**	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
S704**	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

OJ800 Shallow well	INJECTOR MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION LIFT (M)	DISCHARGE HEAD (M)												MAXIMUM PUMP PRESSURE (kPa)		
				15	21	27	34	40	46	52	58	64	70	76	82		88	95
				CAPACITY (LPM)														
S800#	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
S801*	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
S802*	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
S803*	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
S804**	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
S805**	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
S806**	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 WATER PRESSURE SYSTEMS



JJ400

SUITABLE INJECTORS

D411

D521

D511

JJ600

SUITABLE INJECTORS

D417

D413

D523

D513

D620



OJ700

SUITABLE INJECTORS

D414

D415

D514

D515

D516

D611

D612

D613

OJ800

SUITABLE INJECTORS

D518

D519

D520

D616

D617

D618

D619



# PERFORMANCE TABLE

# JJ / OJ DEEP WELL WATER PRESSURE SYSTEMS

JJ400 Deep well	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 1/4	1 1/4	1	60	45	35	25	18			95	400	
	D521	140-280	3 3/8	1 1/2	1 1/4	75	65	50	40				100	400	
	D511	140-280	-	1 1/2	1 1/4					25	20	18	13	100	385

JJ600 Deep well	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 1/4	1 1/4	1	78	58	43							140	410		
	D413	140-280	-	1 1/4	1				30	25	18				140	430		
	D523	140-280	3 3/8	1 1/2	1 1/4	100	85	63	47						160	414		
	D513	140-280	-	1 1/2	1 1/4				40	30	20	15			165	400		
	D620	140-280	#4 3/8	2	1 1/2				52	45	40	33	25	20	18	13	124	500

OJ700 Deep well	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	40		
						CAPACITY (LPM)													
	D414	210-350	3 1/4	1 1/4	1	90	78	60									186	455	
	D415	210-350	-	-	1				40	30	28	18	15				186	483	
	D514	210-350	3 3/8	-	1 1/4	120	105	75	63								179	469	
	D515	210-350	-	1 1/2	1 1/4				50	40	30						193	483	
	D516	210-350	-	-	-						28	20	13	10			193	455	
	D611	210-350	#4 3/8	-	-	135	120	113	90								179	462	
	D612	210-350	-	2	1 1/2				68	60	48						186	483	
	D613	210-350	-	-	-						54	35	25	25	15		193	518	

OJ800 Deep well	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	40	43	46			49
						CAPACITY (LPM)																
	D520	210-350* or 280-480	3 3/8	1 1/2	1 1/4	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 3/8	-	-	205	173	150										214	517			
	D619	210-350* or 280-480	-	2	1 1/2				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			

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

PUMP MODEL	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															
<b>JJ400</b>			<b>INJECTOR D411</b>					<b>PUMP ONLY</b>										
	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															
			<b>INJECTOR D521</b>					<b>INJECTOR D511</b>				<b>PUMP ONLY</b>						
	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															
<b>JJ600</b>			<b>INJECTOR D417</b>					<b>INJECTOR D413</b>				<b>PUMP ONLY</b>						
	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															
			<b>INJECTOR D523</b>					<b>INJECTOR D513</b>				<b>PUMP ONLY</b>						
	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															
			<b>INJECTOR D620</b>											<b>PUMP ONLY</b>				
	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

DEEP WELL  
HIGH PRESSURE

PUMP MODEL	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																
OJ700			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. At 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

DEEP WELL  
HIGH PRESSURE

**OJ800**

PUMP MODEL	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														

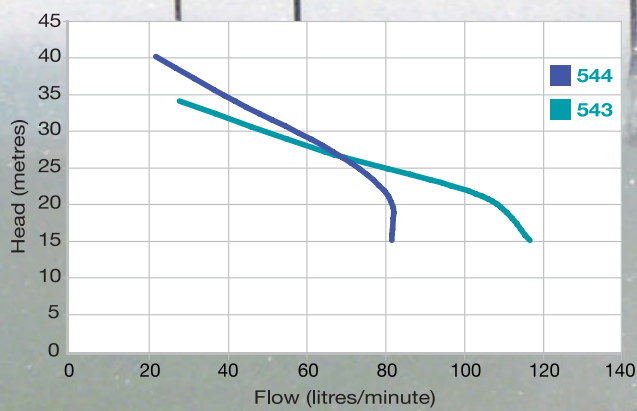


# 500 SERIES

## WATER PRESSURE SYSTEMS

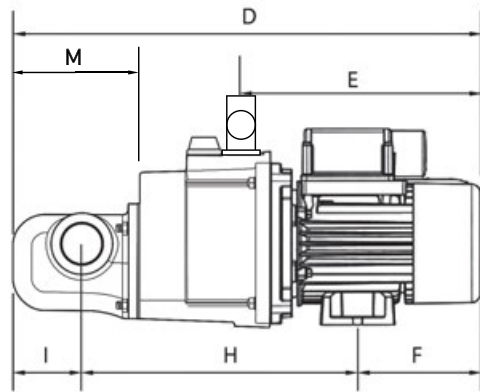
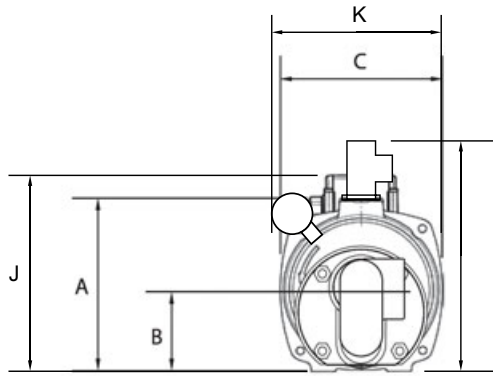


500 SERIES	MODEL	PRESSURE SWITCH SETTING (kPa)	SUCTION LIFT (M)	DISCHARGE HEAD (M)					MAXIMUM PUMP PRESSURE (kPa)
				15	21	27	34	40	
				CAPACITY (LPM)					
543		210-350	0	117	105	65	28		390
			3	94	84	52	22		360
			6	67	60	37	16		330
			7.6	47	42	26	11		315
544		280-420	0	82	81	67	42	22	475
			3	66	65	54	34	18	445
			6	47	46	38	24	13	415
			7.6	33	32	27	17	9	400

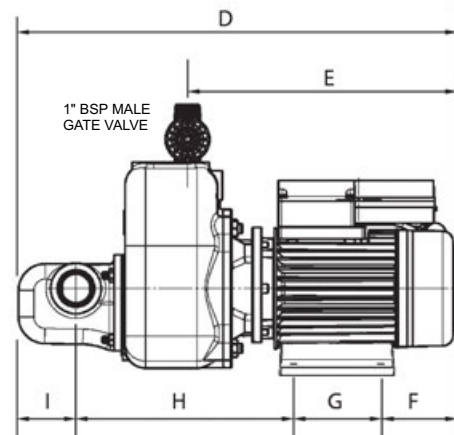
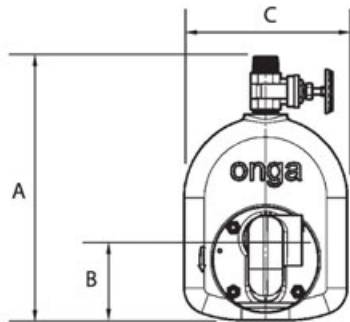


# FARMMASTER WATER PRESSURE SYSTEMS

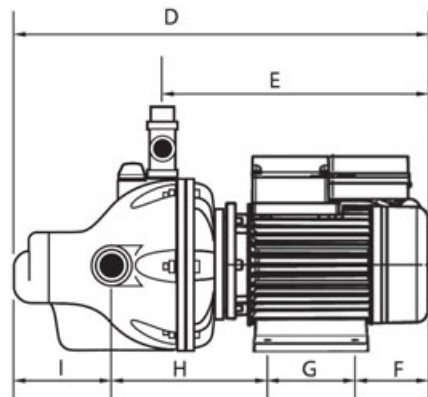
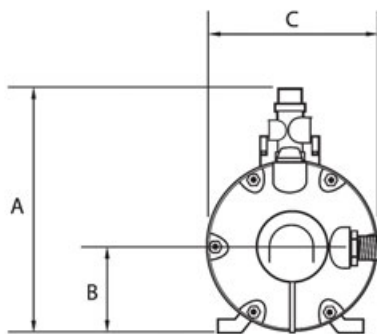
**JJ400 & JJ600**  
Shallow well configuration



**OJ700 & OJ800**  
Shallow well configuration



**543 & 544**



DIMENSIONS  
TABLE

PUMP MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M
JJ400	190	90	180	525	255	140	N/A	305	80	220			
JJ600	210	105	210	540	335	110	N/A	350	80	265	220	285	135
JJ600 3PH	210	105	210	560	350	125	N/A	355	80	245	220	285	135
OJ700	350	110	220	575	365	110	100	285	80				
OJ700 3ph	350	110	210	590	380	125	100	285	80				
OJ800	350	110	220	635	420	120	140	300	80				
OJ800 3PH	350	110	280	645	430	125	140	300	80				
543/544	290	100	230	530	330	110	100	205	115				

Note: Unless otherwise specified, all dimension in mm.

# FARMMASTER

## WATER PRESSURE SYSTEMS

MATERIALS of CONSTRUCTION	COMPONENT	MODEL					
		543	544	JJ400	JJ600	OJ700	OJ800
	<b>PUMP CASING</b>	NORYL	NORYL	CAST IRON	CAST IRON	CAST IRON	CAST IRON
	<b>IMPELLER</b>	POLYCARB GF	POLYCARB GF	POLYCARB GF	POLYCARB GF	POLYCARB GF	POLYCARB GF
	<b>BAFFLE</b>	NORYL	NORYL	ABS GF	NORYL	NORYL	NORYL
	<b>END SHIELD</b>	CAST IRON	CAST IRON	CAST IRON	CAST IRON	CAST IRON	CAST IRON
	<b>SHAFT SLEEVE</b>	NYLON	NYLON	NYLON	NYLON	NYLON	STAINLESS STEEL
	<b>MOTOR SHAFT</b>	MILD STEEL	MILD STEEL	MILD STEEL	MILD STEEL	MILD STEEL	MILD STEEL
	<b>MOTOR SHELL</b>	CAST IRON	CAST IRON	ALUMINIUM	CAST IRON	CAST IRON	CAST IRON
	<b>O-RING`S</b>	NITRILE	NITRILE	NITRILE	NITRILE	NITRILE	NITRILE

MOTOR DATA	MODEL								
	543	544	JJ400	JJ600	JJ600 3PH	OJ700	OJ700 3PH	OJ800	OJ800 3PH
<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	544	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	6.3	4.5	6.4	2.6	8.5	3.6	14/7	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	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	

# FARMMASTER

## WATER PRESSURE SYSTEMS

ALL MODELS	SYMPTOM	CAUSE	REMEDY
	NO WATER	Pump not running	Check power supply.
Gate valve closed		Open gate valve.	
WILL NOT PRIME	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.	
LOW FLOW / LOW PRESSURE	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.	
RAPID CYCLING	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.	
PUMP DOES NOT SHUT OFF	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 the water or out of the water, disconnect the pump from the mains. If the connection plug or power outlet are wet, isolate that circuit at the meter 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 and 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.

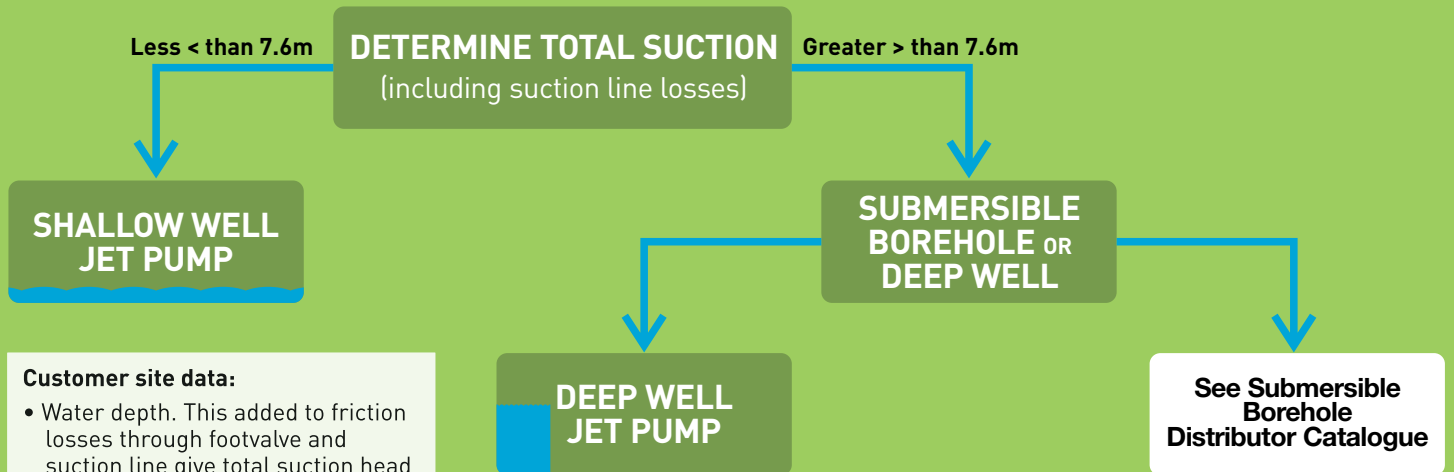


# HOW TO SELECT AND INSTALL CONVERTIBLE JET PUMPS

# FARMMASTER WATER PRESSURE SYSTEMS

The Onga Farmmaster range comprises four rugged cast iron pumps (JJ and OJ), and two non-corrosive moulded jet pumps (500 series).

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 line 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 19. 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 PUMP

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 19. 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.



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

# ORDERING INFORMATION

# FARMMASTER WATER PRESSURE SYSTEMS

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#		544#	
	JJ400 1PH	110031	JJ600 1PH	110021	OJ700 1PH	110144	OJ800 1PH	110121	543 1PH	354300	544 1PH	354400
-	-	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	S700	110471	S800	110476
	S501	110446	S601	110449	S701	110472	S801	110477
	S502	110447	S602	110450	S702	110473	S802	110478
			S603	110451	S703	110474	S803	110479
					S704	110475	S804	110480
							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

# SUITABLE PRESSURE TANKS

# FARMMASTER WATER PRESSURE SYSTEMS

Each pressure tank in the Onga range is constructed to store water under pressure to minimise pump cycling and running costs and to maximize 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	-	-	-	
CAPACITY (LITRES)	8	12	24	40	80	100	
MAX RATING (KPA)	690			600			
DIAMETER (CM)	19	22	30	38	38	38	
HEIGHT (CM)	23	33	41	53	72	91	
BSP	1" M						
WEIGHT (KG)	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
CAPACITY (LITRES)	55	75	112	178	227	328	453
MAX RATING (KPA)	690						
DIAMETER (CM)	41		61	53	61		
HEIGHT (CM)	71.6	86.6	117.6	112.8	166.4	145.3	191.5
BSP	1" M			1 1/4" M			
WEIGHT (KG)	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.

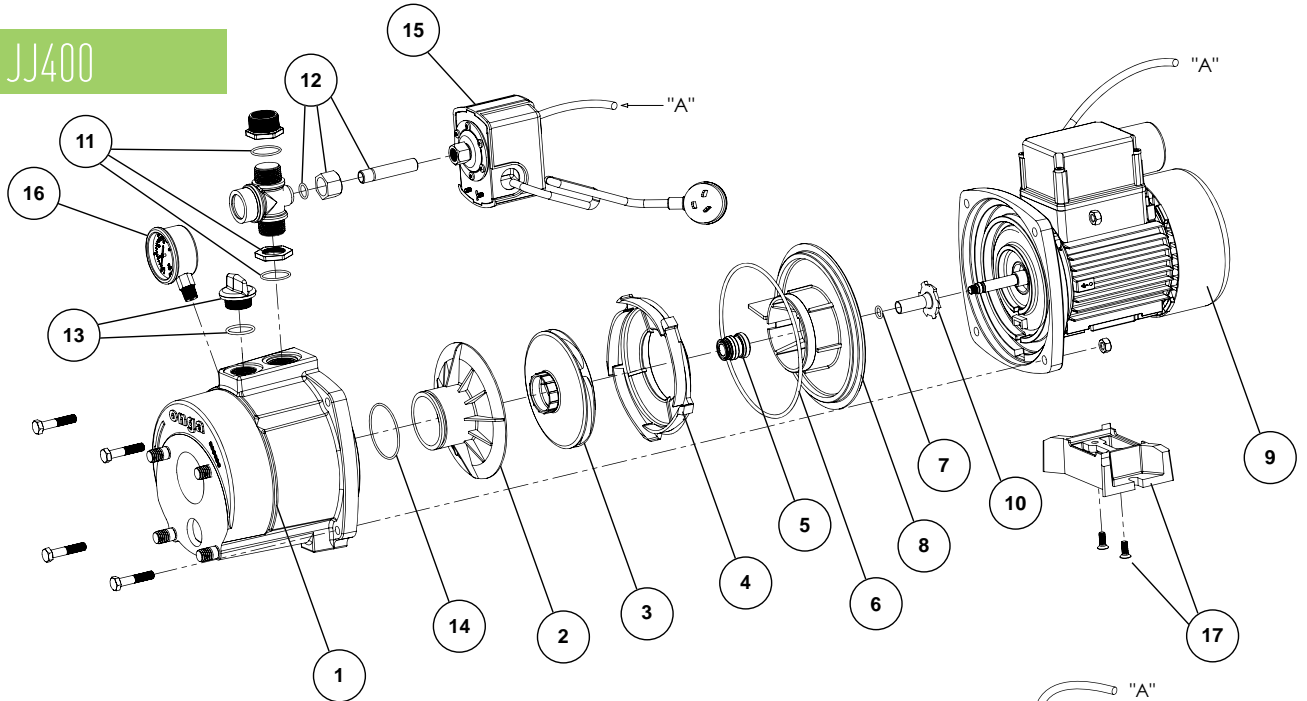
When the pump is connected to a sprinkler system, which has a constant demand only the minimum tank size is required.

### Note:

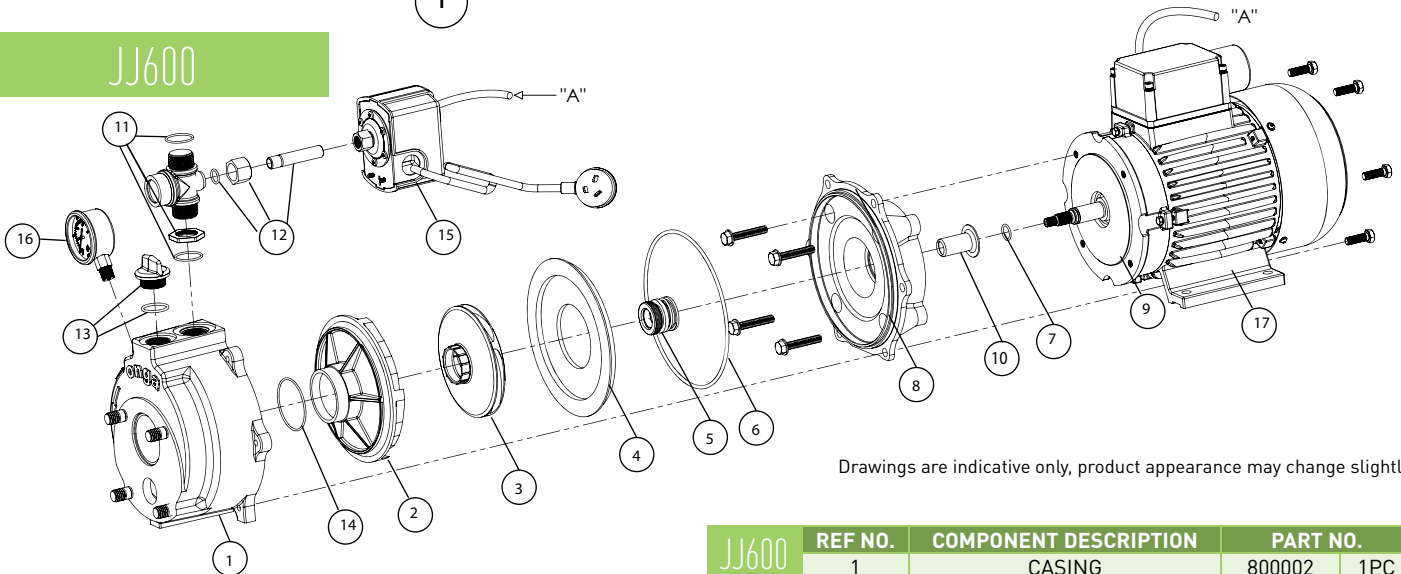
- Always size the tank to the smallest demand of the pump.
- It is impossible to have a pressure tank that is 'too big.'

# FARMMASTER WATER PRESSURE SYSTEMS

## JJ400



## JJ600



Drawings are indicative only, product appearance may change slightly.

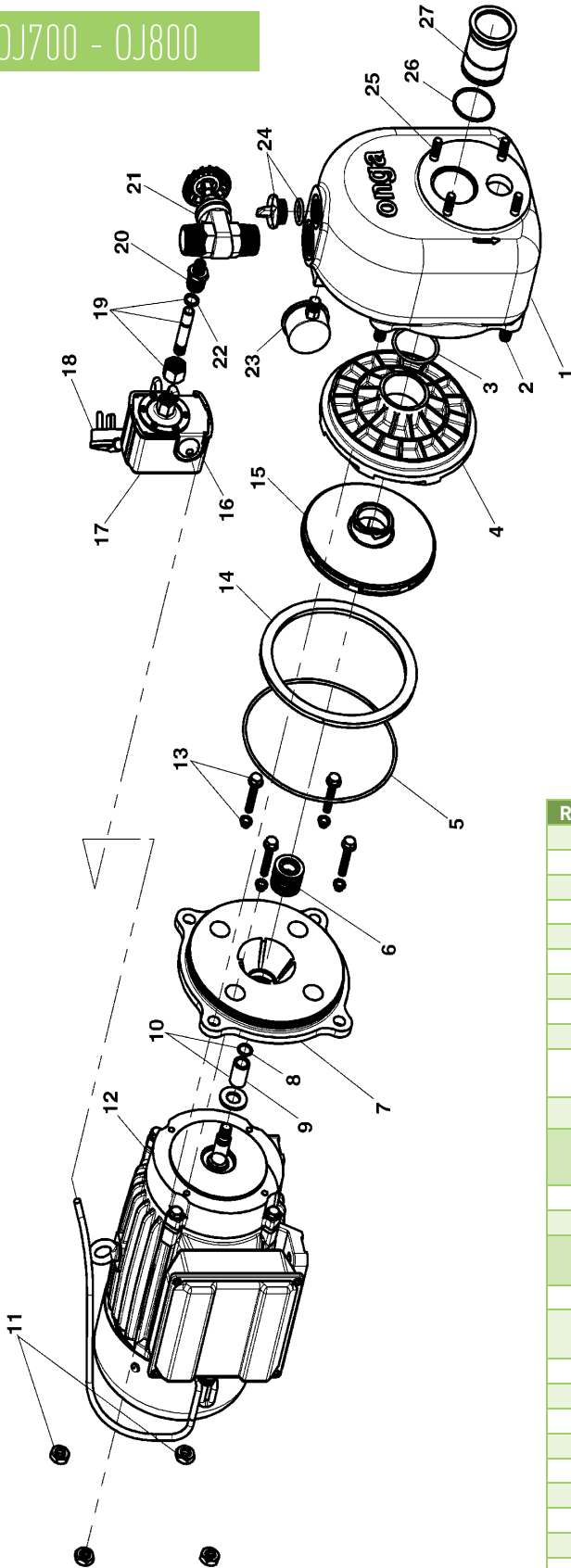
JJ400 PN 110031	REF NO.	COMPONENT DESCRIPTION	PART NO.	
	1	CASING	800560	1PC
	2	SEPARATOR PLATE	404611	1PC
	3	IMPELLER	504893K	1PC
	4	BAFFLE	302190K	1PC
	5	SEAL KIT (INC. 5, 6 & 10)	800582K	1PC
	5a	SEALS (PK 25)	800901	1PC
	6	O-RING CASING	702206K	1PC
	7	O-RING SLEEVE	-	-
	8	BAFFLE	302060K	1PC
	9	MOTOR	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 (PK/5)	70211K	1PC
	15	PRESSURE SWITCH	700244	-
	16	PRESSURE GAUGE	700240	1PC
	17	BASE & SCREW KIT	800258	5PC

JJ600 1PH PN 110021	REF NO.	COMPONENT DESCRIPTION	PART NO.	
	1	CASING	800002	1PC
	2	DIFFUSER	402810K	1PC
	3	IMPELLER (SINGLE PHASE)	506333K	1PC
	3	IMPELLER (THREE PHASE)	506339K	1PC
	4	BAFFLE	403231K	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	403231	1PC
	9	MOTOR (1 PHASE)	800445	1PC
	9	MOTOR (3 PHASE)	800447	1PC
	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
	17	BASE & SCREW KIT	800256	5PC

# FARMMASTER

## WATER PRESSURE SYSTEMS

OJ700 - OJ800



OJ700  
1PH  
PN  
110144

OJ800  
1PH  
PN  
110121

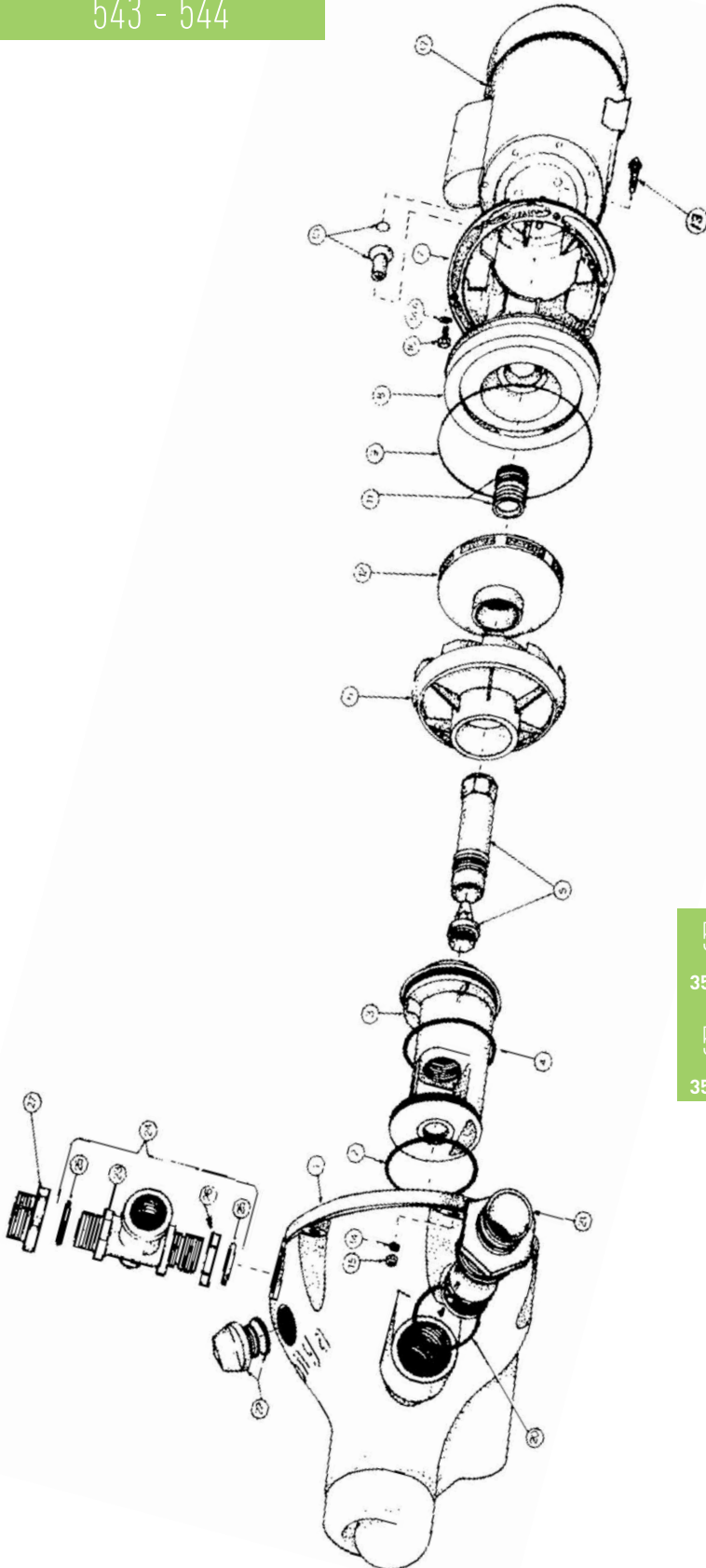
OJ700  
3PH  
PN  
110119

OJ800  
3PH  
PN  
110124

REF NO.	COMPONENT DESCRIPTION	PART NO.	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

# FARMMASTER WATER PRESSURE SYSTEMS

543 - 544



REF NO.	COMPONENT DESCRIPTION	PART NO.	
543 PN 354300	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
544 PN 354400	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
	16	Screw (Set of 10)	800098 4PC
	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	

Drawings are indicative only, product appearance may change slightly.

