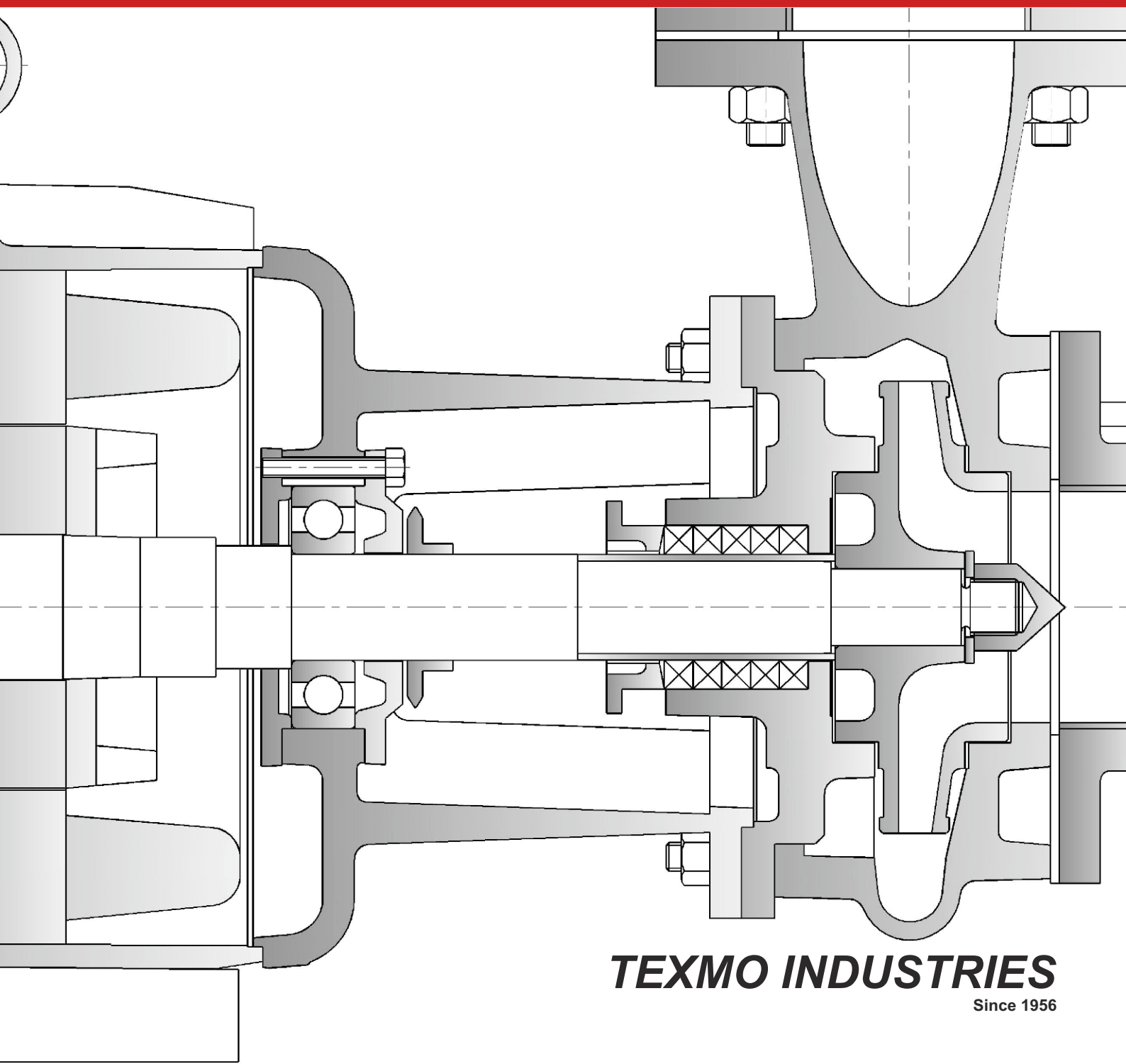


OPENWELL SUBMERSIBLE MONOBLOCS  
PERFORMANCE CHART



**TEXMO INDUSTRIES**

Since 1956

## GENERAL INFORMATION

### PERFORMANCE RELATED SPECIFICATIONS

- Recommended voltage range :  
(At motor terminal)

Single Phase	Three Phase
180 - 240 V	350 - 440 V

- Electric power supply : 415 / 220 V, 50 Hz, AC power supply

- Connection :

Group	DOL	SD
OVS	Up to 7.5 HP	7.5 HP & above

- Suitable overload relay for three phase and MCB for single phase products are to be provided as an electrical safety measure for the machine.
- Advisable to operate in the pump set in the recommended range for trouble free operation and to ensure a long life.
- Time interval between subsequent starts : 5 minutes (minimum)
- Pump sets are suitable for pumping clear, cold, non-aggressive water without any abrasive solid particles with the following characteristics

Temperature : 33°C Maximum

Allowable sand content : 50 mg / lit Maximum

Total Dissolved Solids : 3000 mg / lit Maximum

Hardness : 300 Maximum

pH value : 6.5 - 8.5

Direction of rotation : Anti clockwise when viewed from the delivery side of the pump

### Others

- Performance values given are subject to change in accordance with prevailing voltage and frequency conditions.
- Head values given in the performance charts are exclusive of pipe friction and fitting losses. These losses need to be taken into account while calculating the actual total head before selecting a suitable pump set.
- In view of continuous improvements on existing products, information and performance values given in the catalogue are subject to change without notice.

Note : Shaded figures in the chart indicate the recommended operating range.



## PUMP SELECTION

Irrigation wells and pumps are costly installations, which require efficient utilization. A major part of the energy used in agriculture is in pumping water. Hence efficient utilization of the limited energy resources calls for the selection of the most suitable pump, keeping in view the requirements of irrigation, characteristics of the well / water source, kind of power available, economic conditions of the farmer and other factors. It is a process of matching of well and pump characteristics for optimum water output.

### CRITERIA FOR SELECTION

The main factors influencing the selection of pumping sets are :

- i. Peak water requirement
- ii. Yield of well or water source
- iii. Availability of energy

### WATER REQUIREMENT, V IN L/D

It is the maximum quantity of water required in litres / day to meet out the daily crop water requirement and pumping rate in l/s is calculated by  $V / (T \times 3600)$  where, T – Average pumping hours.

#### Relevant Details

1. Daily crop water requirement in litres or cm for different stages
2. Cropped area in  $m^2$  ( $m^2 \times cm \times 10$  will give water requirement in litres)

### YIELD OF WELL OR WATER SOURCE, Y IN L/S

It is the recuperation rate at which water recharges into the well and it is the maximum rate at which water can be pumped out under steady draw down conditions. This can be assessed directly from pump testing results or converted from inch to lit./s referring to discharge table.

#### Relevant Details

1. Type of water source (Open well / River / Sump)
2. Static water level below ground level (Water level when pump is switched off)
3. Dynamic water level below ground level (Expected level when pump is switched on)
4. Expected maximum low water level during summer
5. Proposed pump set erection depth
6. Existing / proposed pipe details (Sizes and lengths)
7. Vertical elevation from water source to discharge point
8. Number of fittings like (Tee, Bends, Valves etc..)

### ENERGY AVAILABLE, HP

It is the quantitative and qualitative data on the power available for pumping out the water from the water source. This includes phase, sanctioned HP, frequency, voltage fluctuation and three and two phase power supply and time of which power is available.

#### Relevant Details

1. Main line to starter distance
2. Starter to pump set distance



## Selection Procedure

### Step 1 - Discharge calculation, Q

- V – Maximum crop water requirement in litres, D in case of irrigation depth in cm for peak demand of water for the selected cropping pattern
- A – Cropped area in m<sup>2</sup>
- T – Allowed water filling time or pumping time in sec (considering power availability hrs)

Required pumping rate,  $Q = V/T$  or  $(D \times A \times 10) / T$

[In case of trying out maximum possible discharge, Q is to be assumed]

### Step 2 – Comparison of discharge, Q with yield, Y

As indicated earlier, discharge rate has to be limited to 80% of the safe yield for trouble free performance and better pump life avoiding any dry running

### Step 3 – Selection of pump size or series

Based on the calculated discharge rate, Q the suitable pump size is to be selected. In case of bore well submersibles, suitable pump series is to be selected considering bore well size also.

### Step 4 – Total head calculation, H

#### Suction head, H<sub>s</sub>

D<sub>s</sub> – Size of suction pipe in mm

L<sub>s</sub> – Length of suction pipe in m including equivalent length of pipe for the fittings

V<sub>s</sub> – Vertical distance of pump set from working water level in m

Refer to pipe friction loss chart or table and read friction value, F<sub>s</sub>% in m / 100 m length of suction pipe against discharge, Q and existing or selected pipe size, D<sub>s</sub>.

Pipe friction in suction pipe,  $F_s = (L_s \times F_s\%) / 100$

Suction head,  $H_s = V_s + F_s$

Note: For Submersible pump sets the suction head value is zero

#### Delivery head, H<sub>d</sub>

D<sub>d</sub> – Size of delivery pipe in mm

L<sub>d</sub> – Length of delivery pipe in m including equivalent length of pipe for the fittings

V<sub>d</sub> – Vertical distance of discharge point from pump set level in m including ground elevation

Refer to pipe friction loss chart or table and read friction value, F<sub>d</sub>% in m per 100 m length of delivery pipe, against discharge, Q and existing or selected pipe size, D<sub>d</sub>.

Pipe friction in delivery pipe,  $F_d = (L_d \times F_d\%) / 100$

Delivery head,  $H_d = V_d + F_d$

### Step 5 – Total head

Total head,  $H = H_s + H_d + H_f + H_e$

H<sub>f</sub> – Fitting loss in the entire pipeline system (Refer to fitting loss table)

H<sub>e</sub> – Exit pressure head at discharge point as required



## Step 6 – Energy requirement

Approx. energy requirement,  $HP = (Q \times H) / (75 \times Ep)$

$Ep$  – Pump efficiency value in fraction, which varies with product HP and pipe size

Select an appropriate pump model or stage for the given total head,  $H$  and discharge,  $Q$  referring to the product performance chart. Best efficiency point (declared duty point) is always preferred. If the HP of the selected pump model is less than the sanctioned HP, then we may proceed with the same. If not, assumed or calculated  $Q$  has to be reduced and above steps are to be repeated.

In case of bore well submersible pump sets, correct product series is to be decided based on the required pumping rate  $Q$  before selecting a suitable pump model and number of stages.

## SELECTION OF PUMPS FOR PARALLEL CONNECTIONS

Requirement of parallel connections arises when the required discharge rate is not met with the available pump models. In this case two or more pumps with almost matching pressure head should be selected. Following factors are to be considered for parallel operations.

- a. Pumps of similar head characteristics are to be selected
- b. No pump should operate at its shut off head or above maximum permissible head
- c. No pump should operate below recommended head range as this leads to cavitation

## SELECTION OF PUMPS FOR SERIES CONNECTIONS

Requirement of series connections arises when the required total head is not met with the available pump models. In this case two or more pumps with almost matching discharge rate should be selected. Series installations of pumps are to be spaced in such a way that neither the pump gets overloaded or ends up with discharge cavitation.

## OTHER FACTORS AFFECTING THE PUMP PERFORMANCE (after installation)

1. Suction head variation
2. Dynamic water level i.e., draw down variation
3. Condition of existing pipe line including inner roughness / amount of sedimentation and the life
4. Recharge rate of water source
5. Frequency and voltage conditions

### Cable selection

$V_a$  – Actual voltage available in the field (Volts)

$V_r$  – Rated voltage of the motor (Volts)

$L_a$  – Actual cable length from starter to motor terminal (metre)

$HP$  – Power of the selected motor

$I$  – Full load current of the selected motor [For SD motors, it is  $1/\sqrt{3}$  times the FL current] (Amperes)

$L_c$  – Calculated equivalent cable length  $(V_r \times L_a) / V_a$  (metre)

Refer to cable selection chart and select appropriate cable size for the given  $I$  and  $L_c$  values.

Follow the same procedure for selecting suitable wire / cable size for mail line to starter.



## Three Phase Openwell Submersible Monoblocs (TSM Z / TSM Series)



### PRODUCT FEATURES

- Easy installation. Foundation is not required at different levels since the pumpset rests at the bottom of the well.
- Improved efficiency with all the advantages of mounting the prime mover and pump integrally on the same shaft.
- Dynamically balanced rotors and impellers ensure vibration free performance and enhanced life.
- The open well submersible monoblock can be placed at the bottom of the well. This arrangement does not require a suction pipe.
- Water can also be drawn from a borewell which is bored at the bottom of the openwell by inserting a suction pipe into the borewell and providing a cooling tank arrangement to keep the monoblock submerged in water.
- Squirrel cage motor of wet type, water cooled designed to operate in a wide range of voltage variation 350 - 440 V, 50Hz, AC power supply.

### MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	CI FG 200	Motor body	CI GR 180
Casing	CI GR 180	Shaft	55C8
Sleeve	AISI 410	Thrust bearing	GM / AISI 410 - Asbestos
Bearing bush	LTB-4	Winding Wire	Polywrapped / PVC insulated copper

### APPLICATIONS

Irrigation (Flood, Sprinkler, Drip) | Drinking water supply | Industrial water supply | Cooling water circulating systems









## Three Phase Openwell Submersible Monoblocs (TSM ZR Series)



### PRODUCT FEATURES

- Designed with most updated stamping design tool in the world
- Star rated conforming to BEE standards for lower operating cost
- Better water circulation for extended winding coil life
- Increased cooling ways and bearing area for extended life
- Stator end rings are provided for better winding convenience and rear cover cap for easy bush serviceability.
- Engineered with most advanced solid modeling technology for elegant outlook
- Increased surface area for reducing the running temperature by 5°C
- New winding design to withstand the fluctuating voltages [220-400 V]
- Increased width of motor baseplate for better stability and vibration-free running

### MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	CI FG 200	Motor body	CI GR 180
Casing	CI GR 180	Shaft	AISI 410
Sleeve	AISI 410	Thrust bearing	SS + Fiber carbon
Bearing bush	LTB-4	Winding Wire	Polywrapped copper

### APPLICATIONS

Irrigation (Flood, Sprinkler, Drip) | Drinking water supply | Industrial water supply | Cooling water circulating systems



## PERFORMANCE CHART

### TARO "TSM-ZR SERIES" - THREE PHASE OPENWELL SUBMERSIBLE MONOBLOCKS

Approximate performance values of TSM-ZR series at 350V (-15% to +6%), 2900 rpm, 50 Hz AC power supply

Model Name	Connection	Motor Rating		Pipe Size (mm)		TOTAL HEAD VALUES																					
		kW	HP	Suc.	Del.	Metres	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42		
						Feet	20	26	33	39	46	52	59	66	72	79	85	92	98	105	112	118	125	131	138		
TSM 30 ZRF	DOL	2.2	3	65	50						10.0	9.2	8.3	7.3	6.0	4.4											
TSM 1 ZR C	DOL	2.2	3	65	50			14.9	13.9	12.8	11.5	10.1	8.4	6.6	4.6												
TSM 12 ZR C	DOL	2.2	3	75	65			18.1	16.7	15.2	13.5	11.0	6.4														
TSM 16 ZR	DOL	2.2	3	100	75			22.0	18.2	13.6	4.2																

### TARO "TSM-ZR SERIES" - THREE PHASE OPENWELL SUBMERSIBLE MONOBLOCKS

Approximate performance values of TSM-ZR series at 350V (-15% to +6%), 2900 rpm, 50 Hz AC power supply

Model Name	Connection	Motor Rating		Pipe Size (mm)		TOTAL HEAD VALUES																					
		kW	HP	Suc.	Del.	Metres	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44		
						Feet	26	33	39	46	52	59	66	72	79	85	92	98	105	112	118	125	131	138	144		
TSM 30 ZRCF	DOL	2.2	3	65	50						10.0	9.2	8.3	7.3	6.0	4.4											
TSM 31 ZRCFS	DOL	3.7	5	50	50								7.7	7.4	7.1	6.8	6.4	5.8	5.0	3.8							
TSM 31 ZRF C	DOL	3.7	5	65	50						9.4	9.3	9.0	8.6	8.0	7.2	6.3	5.1	3.8								
TSM 4 ZR C	DOL	3.7	5	65	50					15.0	13.9	12.6	11.2	9.6	7.8	5.4											
TSM 6 ZR C	DOL/SD	3.7	5	75	65					17.2	15.6	13.7	11.5	9.5													
TSM 6 ZR	SD	3.7	5	75	65					17.2	15.6	13.7	11.5	9.5													
TSM 37 ZNR	DOL/SD	3.7	5	100	75	28.4	25.7	22.2	18.0	12.7	4.6																
TSM 35 ZRF C	DOL	5.5	7.5	65	50										13.5	12.9	12.2	11.5	10.7	9.9	9.0	8.0	6.8	5.2			
TSM 8 ZR C	DOL	5.5	7.5	65	50									16.6	15.7	14.8	13.8	12.8	11.5	9.8	7.9	5.4					
TSM 10 ZR C	DOL/SD	5.5	7.5	75	65							18.7	17.8	16.7	15.4	13.8	11.8	9.8									
TSM 13 ZR	DOL	5.5	7.5	100	75				27.3	24.7	21.7	18.5	14.0	8.7													

Performance confirming to IS : 14220

D O L - Direct On Line

S D - Star Delta

- Star rated sets

C - Copper rotor also available

- Against batch order

#### PRODUCT TYPE KEY

TSM30ZRF - Taro Openwell Submersible Monobloc (30 - Pump code, ZR - Standard, F - Flange)

TSM4ZRC - Taro Openwell Submersible Monobloc (4 - Pump code, ZR - Standard, C - Copper rotor)



## Three Phase Vertical Openwell Submersible Monoblocs (TVSM)



### PRODUCT FEATURES

- Easy installation. Foundation is not required at different levels since the pumpset rests at the bottom of the well.
- Improved efficiency with all the advantages of mounting the prime mover and pump integrally on the same shaft.
- Dynamically balanced rotors and impellers ensure vibration free performance and enhanced life.
- The multistage vertical openwell submersible monobloc can be placed at the bottom of the well. This arrangement does not require a suction pipe.
- Water can also be drawn from a borewell which is bored at the bottom of the openwell by inserting a suction pipe into the borewell and providing a cooling tank arrangement to keep the monoblock submerged in water.
- Squirrel cage motor of wet type, water cooled designed to operate in a wide range of voltage variation 350 - 440 V, 50Hz, AC power supply.

### MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	CI FG 200	Motor body	CI GR 180
Diffuser	CI FG 200	Shaft	45C8
Diffuser Housing	CI FG 200	Thrust bearing	AISI 420 - Carbon
Bearing bush	LTB-4	Winding Wire	Polywrapped copper

### APPLICATIONS

Irrigation (Flood, Sprinkler, Drip) | Drinking water supply | Industrial water supply | Cooling water circulating systems



## PERFORMANCE CHART

### TEXMO "TVSM SERIES" - THREE PHASE VERTICAL OPENWELL SUBMERSIBLE MONOBLOCS

Approximate performance values of TVSM 15 / 25 / 30 / 35 series at 415V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name	Connection	Motor Rating		Stages	Pipe Size (mm)	TOTAL HEAD VALUES														
						HEAD VALUES IN METRES														
		kW	HP			Gpm	0	39.6	46.2	52.8	59.4	72.6	79.2	85.8	99.0	119	132	145	172	
						l/m	0	180	210	270	270	330	360	390	450	540	600	660	780	
						M <sup>3</sup> /hr	0	10.8	12.6	16.2	16.2	19.8	21.6	23.4	27.0	32.4	36.0	39.6	46.8	
l/s	0	3.0	3.5	4.0	4.5	5.5	6.0	7.0	8.5	9.5	10.5	11.5	12.5							
TVSM 1503 ▲	DOL/SD	3.7	5	3	65	58.5	53.3	52.1	50.7	49.2	45.0	42.0	31.5							
TVSM 1505	DOL	5.5	7.5	5		97.5	88.8	86.8	84.5	82.0	75.0	70.0	52.5							
TVSM 1505 ☒	SD	5.5	7.5	5		97.5	88.8	86.8	84.5	82.0	75.0	70.0	52.5							
TVSM 1506 ☒	SD	7.5	10	6		117	106.5	104.1	101.4	98.4	90.0	84.0	63.0							
TVSM 2502 ▲	DOL	3.7	5	2		45.0		42.0	41.5	41.0	39.6	38.8	37.0	33.6	30.2	23.8				
TVSM 2503 ▲	DOL	5.5	7.5	3		67.5		63.0	62.3	61.5	59.4	58.2	55.5	50.4	45.3	35.7				
TVSM 2504	SD	7.5	10	4		90.0		84.0	83.0	82.0	79.2	77.6	74.0	67.2	60.4	47.6				
TVSM 2505	SD	9.3	12.5	5		113		105	104	103	99.0	97.0	92.5	84.0	75.5	59.5				
TVSM 2506 ☒	SD	11.5	15	6		135		126	125	123	118.8	116.4	111.0	100.8	90.6	71.4				
TVSM 3003	SD	7.5	10	3		78.0				71.6	69.8	68.6	66.4	63.0	59.0	54.8	47.0			
TVSM 3004	SD	9.3	12.5	4		104				95.5	93.0	91.5	88.5	84.0	78.6	73.0	62.7			
TVSM 3005	SD	11	15.0	5		130				119	116	114	111	105	98.3	91.3	78.4			
TVSM 3502 ▲	DOL	5.5	7.5	2		56.0						51.0	50.0	47.7	45.0	41.2	35.3	27.0		
TVSM 3503	SD	9.3	12.5	3		84.0						76.5	75.0	71.6	67.5	61.8	53.0	40.5		
TVSM 3504	SD	11	15	4		112						102	100	95.4	90.0	82.4	70.6	54.0		

### TEXMO "TVSM SERIES" - THREE PHASE VERTICAL OPENWELL SUBMERSIBLE MONOBLOCS

Approximate performance values of TVSM 50 / 60 series at 415V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name	Connection	Motor Rating		Stages	Pipe Size (mm)	TOTAL HEAD VALUES														
						HEAD VALUES IN METRES														
		kW	HP			Gpm	0	99	119	132	145.2	171.6	198.0	211.2	231.0	264.0	297.0	330.0	363.0	
						l/m	0	450	540	600	660	780	900	960	1050	1200	1350	1500	1650	
						M <sup>3</sup> /hr	0	27.0	32.4	36.0	39.6	46.8	54.0	57.6	63.0	72.0	81.0	90.0	99.0	
l/s	0	8.5	9.5	10.5	11.5	12.5	15.0	16.0	17.5	20.0	22.5	25.0	27.5							
TVSM 5004	SD	15	20	4	75	90.0	79.3	77.3	75.0	72.6	70.0	63.1	60.0	55.3	46.7	38.2	28.1			
TVSM 6004	SD	18.7	25	4		90.0			82.2	81.1	79.8	74.8	72.3	68.0	59.9	50.3	39.0	25.4		

Performance conforming to IS : 14420

DOL - Direct On Line

SD - Star Delta

▲ - ISI mark set

☒ - Against batch order

#### PRODUCT TYPE KEY

TVSM 15 03 - Texmo Vertical Openwell Submersible Monobloc, 15 series, 03 - Stages

TVSM 35 03 - Texmo Vertical Openwell Submersible Monobloc, 35 series, 03 - Stages



## PERFORMANCE CHART

### TEXMO "TVSM RC SERIES" - THREE PHASE VERTICAL OPENWELL SUBMERSIBLE MONOBLOCS

Approximate performance values of TVSM RC series at 350 V (-15% to +6%), 2880 rpm, 50 Hz AC power supply

Model Name	Connection	Motor Rating		Stages	Pipe Size (mm)	TOTAL HEAD VALUES															
						HEAD VALUES IN METRES															
		kW	HP			Gpm	0.0	39.6	46.2	52.8	59.4	72.6	79.2	85.8	99	118.8	132	145	172		
						l/m	0.0	180	210	270	270	330	360	390.0	450	540.0	600	660	780		
						M <sup>3</sup> /hr	0.0	10.8	12.6	16.2	16.2	19.8	21.6	23.4	27.0	32.4	36.0	39.6	46.8		
l/s	0.0	3.0	3.5	4.0	4.5	5.5	6.0	7.0	8.5	9.5	10.5	11.5	12.5								
TVSM 1502 RC ☒	DOL	2.2	3	2	65	35.0	31.2	30.5	29.7	28.9	26.9	25.6	22.6	17.3							
TVSM 2502 RC	DOL	3.7	5	2		44.0	39.5	38.7	37.9	37.0	35.0	34.0	31.7	27.7	24.5	20.9					
TVSM 2503 RC	DOL/SD	5.5	7.5	3		65.0	58.9	27.8	56.6	55.3	52.6	51.0	47.7	41.8	37.0	31.4					
TVSM 3502 RC	DOL/SD	5.5	7.5	2		52.0						45.5	43.9	40.0	38.4	35.6	32.6	29.3			

Performance conforming to IS : 14220

DOL - Direct On Line

SD - Star Delta

☒ - Against batch order

#### PRODUCT TYPE KEY

TVSM 15 02 RC - Texmo Vertical Openwell Submersible Monobloc, 15 series, 02 - Stages, R - Standard, C - Copper rotor



## Single Phase Vertical Openwell Submersible Monoblocs (SVSM)



### PRODUCT FEATURES

- Easy installation. Foundation is not required at different levels since the pumpset rests at the bottom of the well.
- Improved efficiency with all the advantages of mounting the prime mover and pump integrally on the same shaft.
- The multistage vertical openwell submersible monobloc can be placed at the bottom of the well. This arrangement does not require a suction pipe.
- Squirrel cage motor of wet type, water cooled designed to operate in a wide range of voltage variation 180 - 240 V, 50Hz, AC power supply.

### MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	Noryl	Motor body	AISI 202
Diffuser	Noryl	Shaft	AISI 410
Diffuser Housing	Noryl	Thrust bearing	AISI 420 - Carbon
Bearing bush	Carbon	Winding Wire	Polywrapped copper

### APPLICATIONS

Fountains | Sumps and Water tanks | Domestic water supply in Apartments | Buildings and Hotels | Gardening and Irrigation



## PERFORMANCE CHART

### TARO "SVSM 15 SERIES" - SINGLE PHASE VERTICAL OPENWELL SUBMERSIBLE MONOBLOCKS

Approximate performance values of SVSM 15 series at 220V (-6% to +15%), 2880 rpm, 50 Hz AC power supply

Model Name	Motor Rating		Stages	Pipe Size (mm)	TOTAL HEAD VALUES										
					Gpm	0.0	6.6	7.9	9.2	10.6	12	13	15	16	17
	kW	HP			l/m	0.0	30	36	42	48	54	60	66	72	78
					M <sup>3</sup> /hr	0.0	1.8	2.2	2.5	2.9	3.2	3.6	4.0	4.3	4.7
					l/s	0.0	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
SVSM 1507 P / QP	0.75	1	7	30	HEAD VALUES IN METRES	55.0	49.5	48.2	46.8	45.0	42.6	40.0	37.3	34.3	30.9

### TARO "SVSM 20 SERIES" - SINGLE PHASE VERTICAL OPENWELL SUBMERSIBLE MONOBLOCKS

Approximate performance values of SVSM 20 series at 220V (-6% to +15%), 2880 rpm, 50 Hz AC power supply

Model Name	Motor Rating		Stages	Pipe Size (mm)	TOTAL HEAD VALUES										
					Gpm	0.0	13.2	16.5	19.8	23.1	26.4	29.7	33.0	36.3	39.6
	kW	HP			l/m	0.0	60.0	75.0	90.0	105.0	120.0	135.0	150.0	165.0	180.0
					M <sup>3</sup> /hr	0.0	3.6	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8
					l/s	0.0	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
SVSM 2005 P / QP	0.75	1	5	40	HEAD VALUES IN METRES	34.0	32.0	31.0	29.5	27.5	25.0	22.5	19.0	16.0	12.5

\*Q\* - With 10 meter PVC Insulated Flat Cable

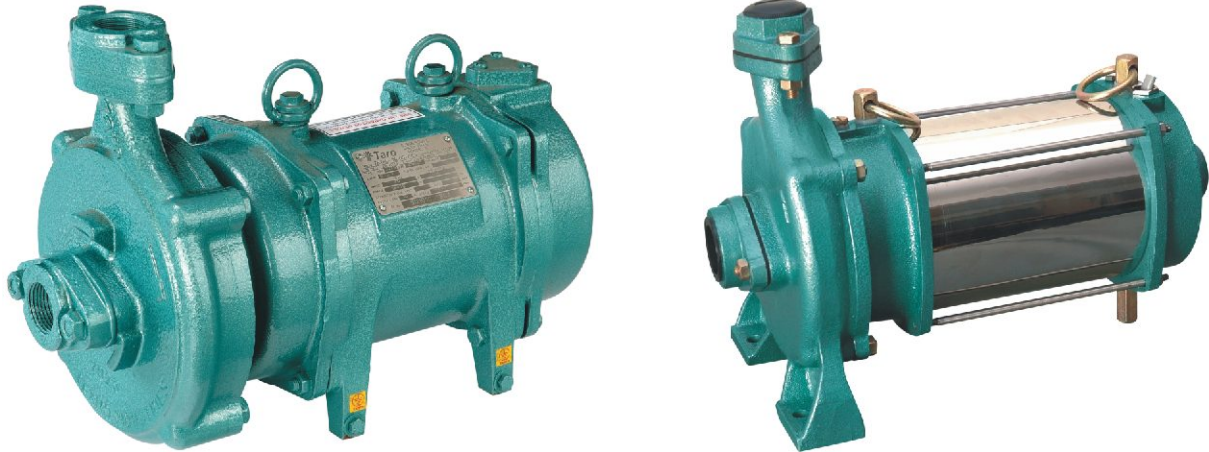
\*P\* - Panel is available with pump set

#### PRODUCT TYPE KEY

SVSM 2005 P - Single Phase Vertical Openwell Submersible Monobloc, 20 series, 05 - Stages, Panel



## Single Phase Openwell Submersible Monoblocs (SSM / TSSM)



### PRODUCT FEATURES

- Easy installation. Foundation is not required since the pumpset works at the bottom of the well.
- Improved efficiency with all the advantages of mounting the prime mover and pump integrally on the same shaft.
- Dynamically balanced rotors and impellers ensure vibration free performance and enhanced life.
- The openwell submersible monobloc can be placed at the bottom of the well. This arrangement does not require a suction pipe.
- Water can also be drawn from a borewell which is bored at the bottom of the openwell by inserting a suction pipe into the borewell and providing a cooling tank arrangement to keep the monoblock submerged in water.
- Squirrel cage motor of wet type, water cooled designed to operate in a wide range of voltage variation 180 - 240 V, 50Hz, AC power supply.

### MATERIAL OF CONSTRUCTION

Part Name	Material	Part Name	Material
Impeller	Noryl	Motor body	CI GR 180
Casing	CI GR 180	Shaft	45C8 / AISI 410
Sleeve	AISI 410 (0.5 & 1.0 hp)	Thrust bearing	Hylam - LTB-4 / AISI 410 - Asbestos
Bearing bush	LTB-4	Winding Wire	Polywrapped copper

### APPLICATIONS

Fountains | Sumps and water tanks | Domestic water supply in apartments | Buildings and hotels | Gardening and irrigation





## PERFORMANCE CHART

### TARO "SSM / TSSM SERIES" - SINGLE PHASE OPENWELL SUBMERSIBLE MONOBLOCS

Approximate performance values of SSM / TSSM series at 220V (-15% to +6%), 2900 rpm, 50 Hz AC power supply

Model Name	Motor Rating		Pipe Size (mm)		TOTAL HEAD VALUES																							
	kW	HP	Suc.	Del.	Metres	6	7	8	9	10	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38			
					Feet	20	23	26	30	33	39	46	49	52	59	66	72	79	85	92	98	105	112	118	125			
TSSM 4025 P	0.37	0.5	25	25	DISCHARGE VALUES IN L/S	2.4	2.3	2.2	2.1	2.1	1.9	1.6	1.5	1.3	1.0													
TSSM 4025 QP <sup>⊠</sup>	0.37	0.5	25	25		2.4	2.3	2.2	2.1	2.1	1.9	1.6	1.5	1.3	1.0													
SSM 7025 <sup>^</sup> ~ <sup>⊠</sup>	0.75	1.0	25	25											2.0	1.8	1.8	1.6	1.4	1.2	0.9	0.5						
SSM 7030 HQP	0.75	1.0	30	25								3.7	3.6	3.5	3.2	2.8	2.3	1.7	1.0									
SSM 7040 <sup>⊠</sup> <sup>⊠</sup>	0.75	1.0	40	40				5.8	5.6	5.2	4.5	3.5	2.7															
SSM 1125	1.1	1.5	25	25												3.0	2.9	2.8	2.7	2.5	2.3	2.1	1.75	1.3	0.8			
SSM 8025	1.1	1.5	30	25												4.4	4.1	3.6	3.1	2.6	1.9	1.2						
SSM 1130 <sup>⊠</sup>	1.1	1.5	40	30											4.6	4.2	3.7	3.1	2.5	1.9								
SSM 1530	1.5	2.0	40	30							5.0	4.9	4.9	4.8	4.7	4.5	4.2	3.7	3.0	2.1	1.1							
SSM 1550 HH	1.5	2.0	50	50						9.9	9.3	8.5	7.9	7.5	6.8	5.5	5.0	4.0	2.7									
SSM 1550H <sup>⊠</sup>	1.5	2.0	50	50						6.8	6.3	5.8	5.5	5.2	4.5	3.5	2.1											
SSM 1565 <sup>⊠</sup>	1.5	2.0	75	65		15.5	14.8	14.1	13.4	12.6	10.5	6.7																
SSM 2250 H	2.2	3.0	65	50												9.2	8.4	7.5	6.5	5.1	2.8							
SSM 3750 H	3.7	5.0	65	50													9.5	9.4	9.3	9.1	8.8	8.2	7.2	6.0	4.4	2.1		

Performance conforming to IS : 14220

<sup>⊠</sup> - Against batch order

Q/~ - 10 Metre cable also available

<sup>^</sup> - ISI marked sets

<sup>⊠</sup> - Three phase also available

<sup>⊠</sup> - TSSM also available

#### PRODUCT TYPE KEY

SSM 70 25 - Single phase open well Submersible Monobloc (70 - Power code, 25 - Delivery size)

SSM 15 50 H - Single phase open well Submersible Monobloc (15 - Power code, 50 - Delivery size, H - High head)

SSM 70 30 H Q P - Single phase open well Submersible Monobloc (15 - Power code, 50 - Delivery size, H - High head, Q - 10 m Cable, P - Panel)



MTP Road, G.N.Mills Post, Coimbatore - 641 029.  
E-mail : [info@texmo.net](mailto:info@texmo.net) | Website : [www.texmo.com](http://www.texmo.com)

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