TSURUMI PUMP

MG - SERIES
SEMI-VORTEX - GRINDER PUMPS

SPECIFICATIONS

■ FEATURES

1. Semi-vortex cast iron impeller and high chrome cast iron grinder with macerating action reduces solids size and grinds stringy material without clogging.

2. Dual inside mechanical seals with silicon carbide faces, running in an oil filled chamber, further protected by a lip seal, provides for the most durable seal design available.

3. Highly efficient, continuous duty, air filled, copper wound motor with class F insulation minimizes the cost of operation.

4. Built in thermal & amperage sensing protector prevents motor failure due to overloading, single phasing (in three phase units), or accidental run-dry conditions.

5. Double shielded, permanently lubricated, high temperature C3 ball bearings rated for a B-10 life of 60,000 hours, extend operational life.

■ APPLICATION

Residential, sewage, effluent.
Commercial office buildings
Restaurants
Pump stations
Municipal lift station
Industrial process lift stations

OIL LIFTER EQUIPPED

■ SPECIFICATIONS

Discharge Size	2 ” NPT (50 mm)
Horsepower Range	2 ~ 5 Hp. (1.5 ~ 3.7 KW)
Performance Range Capacity	7.9 ~ 87.0 G.P.M. (.03 ~ .33 m^3/min)
Head	34.4 Ft. ~ 115 Ft. (10.5 ~ 35.1 m)
Maximum water temperature	104^0 F. (40^0 C.)
Materials of Construction	
Casing	Cast Iron, ASTM 48 Class 30
Impeller	Cast Iron, ASTM 48 Class 30
Shaft	420 Stainless Steel
Motor Frame	Cast Iron, ASTM 48 Class 25
Fasteners	304 Stainless Steel
Mechanical Seal	Silicon Carbide
Elastomers	NBR (Nitrile Buna Rubber)
Impeller Type	Semi-Vortex, solids handling.
Solids Handling Capability	.2" (5 mm)
Bearings	Pre-lubricated, Double Shielded
Motor Nomenclature	
Type, Speed, Hz.	Air Filled, 3600 RPM, 60 Hz.
Voltage, Phase	208-230 or 460 or 575 V. (3 Phase)
Insulation	Class F
Accessories	Submersible Power Cable 32’ (10 m)
Operational Mode	Manual

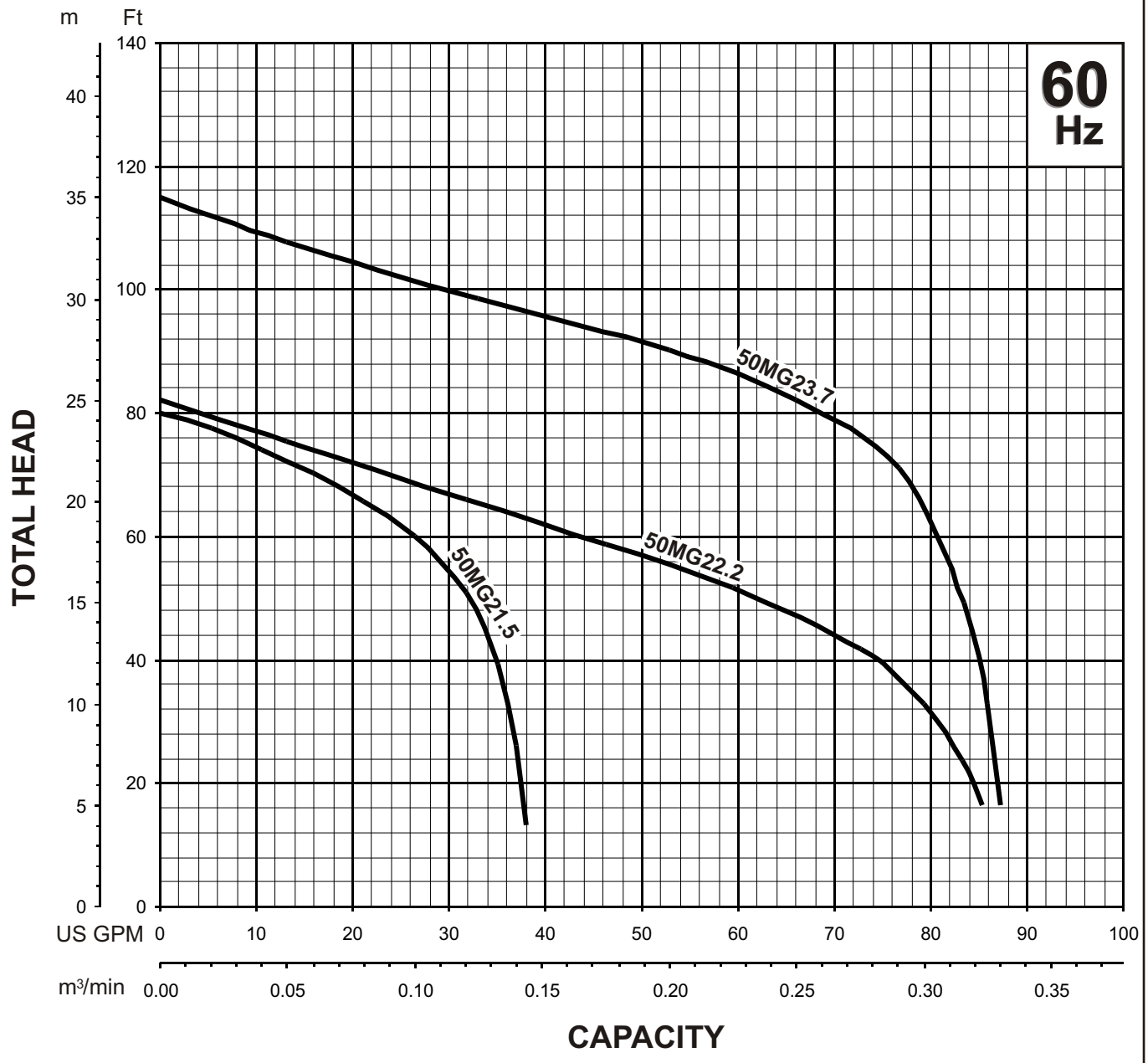
■ STANDARD

■ OPTIONS

Length as Required

TOS Slide rail system

PERFORMANCE RANGE



Sep-24

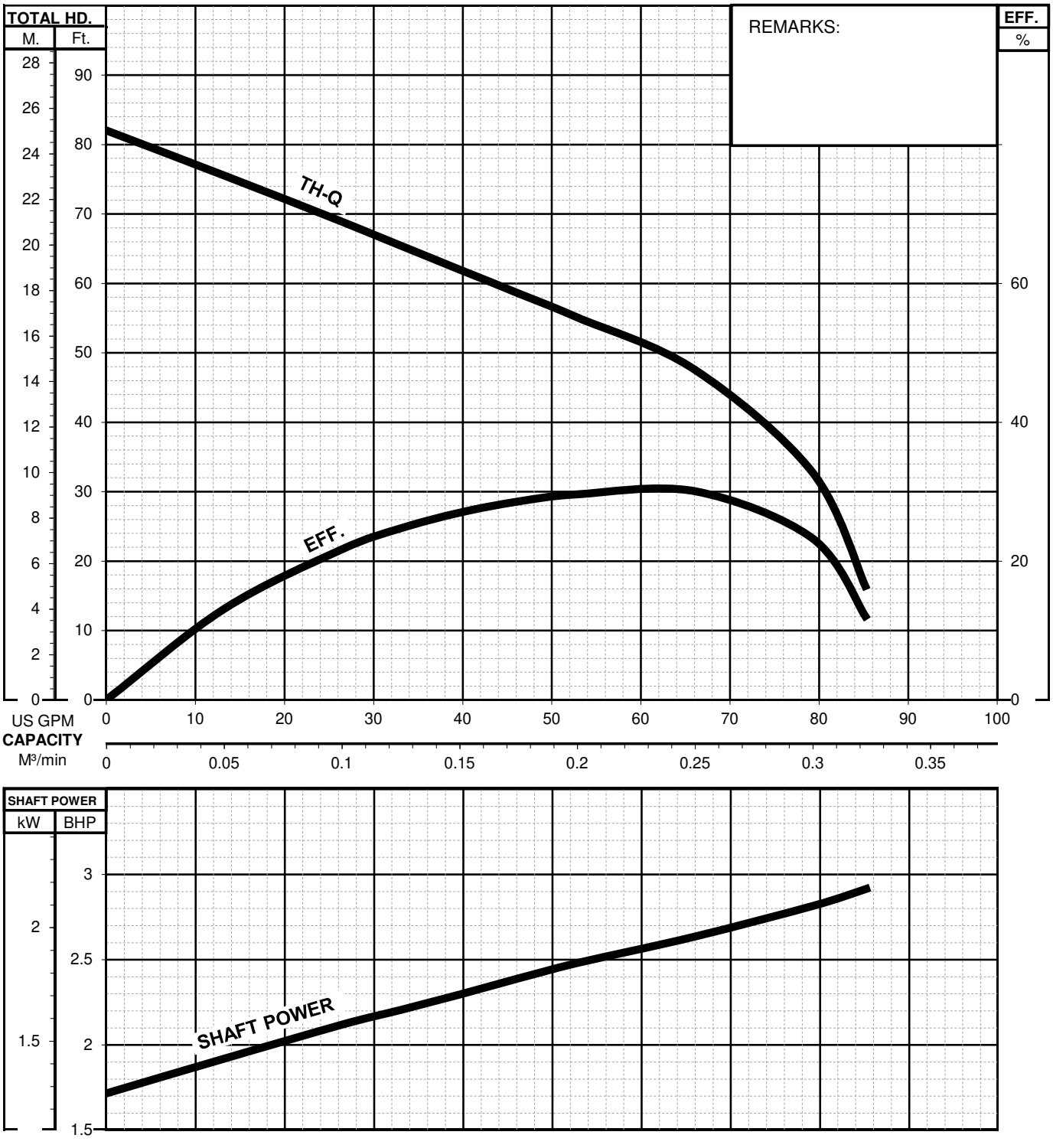
TSURUMI PUMP

MG - SERIES

GRINDER PUMPS

PERFORMANCE CURVE

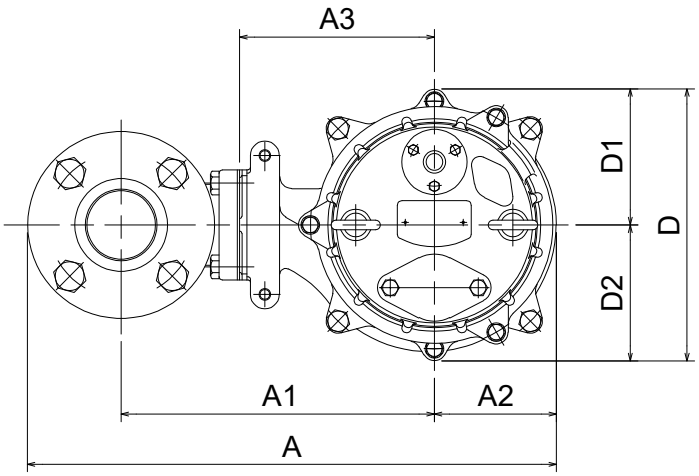
MODEL		BORE	HP	kW	RPM	SOLIDS DIA.	LIQUID	SG.	VISCOSITY	TEMP.
(TOS)50MG22.2 -64		2"/50mm	3	2.2	3514	0.197"/5mm	Water	1.0	1.123cSt.	60°F
PUMP TYPE		**PHASE**	**VOLTAGE**		**AMPERAGE**		**HZ**	**STARTING METHOD**		**INS. CLASS**
Grinder		3	208-230/460/575		9.8-9.8 / 4.8 / 3.8		60	Direct On Line		F
CURVE No.	**DATE**	**PHASE**	**VOLTAGE**		**AMPERAGE**		**HZ**	**STARTING METHOD**		**INS. CLASS**
-	-	-	-		-		-	-		-

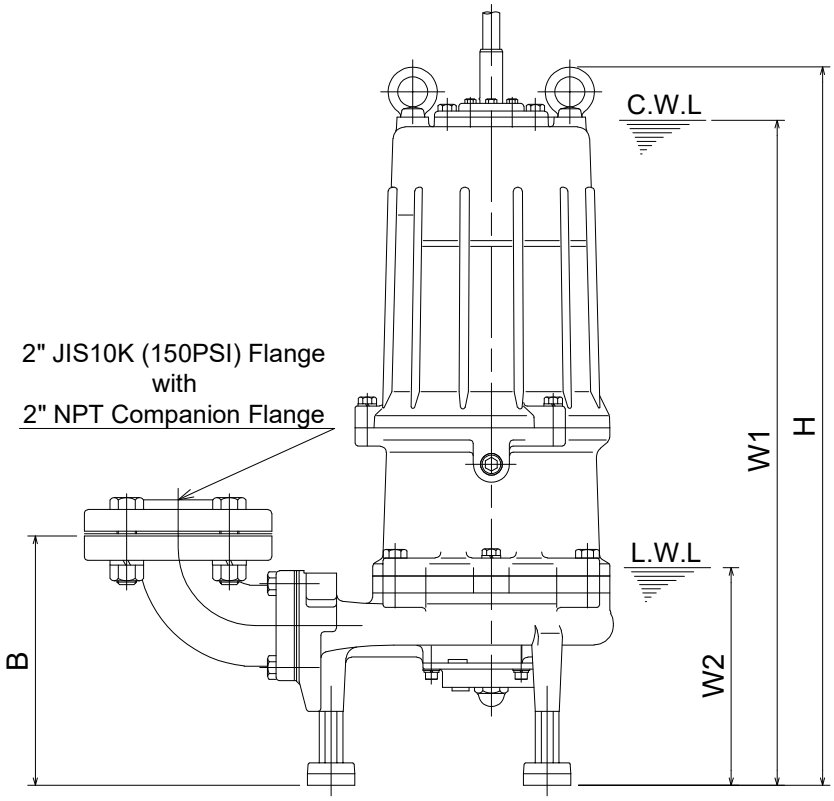


Nov. 2024

TSURUMI PUMP	MG SERIES GRINDER PUMPS	DIMENSIONS

50MG22.2 -64
50MG23.7 -64





C.W.L. :Continuous running Water Level
L.W.L. :Lowest running Water Level

DIMENSIONS:USCS (Inch)

Model	HP	NOM.	Pump & Motor									C.W.L.	L.W.L.	*Wt.
		SIZE	A	A1	A2	A3	B	D	D1	D2	H	W1	W2	(lbs.)
50MG22.2 -64	3	2"	17 1/4	10 3/16	4	6 5/16	8 1/8	8 7/8	4 7/16	4 7/16	23 3/8	21 5/8	7 1/8	170
50MG23.7 -64	5	2"	17 1/4	10 3/16	4	6 5/16	8 1/8	8 7/8	4 7/16	4 7/16	23 3/8	21 5/8	7 1/8	172

DIMENSIONS:METRIC (mm) *Excluding Cable

Model	kW	NOM.	Pump & Motor									C.W.L.	L.W.L.	*Wt.
		SIZE	A	A1	A2	A3	B	D	D1	D2	H	W1	W2	(kg)
50MG22.2 -64	2.2	50	438	259	101	161	206	226	113	113	594	550	180	77
50MG23.7 -64	3.7	50	438	259	101	161	206	226	113	113	594	550	180	78

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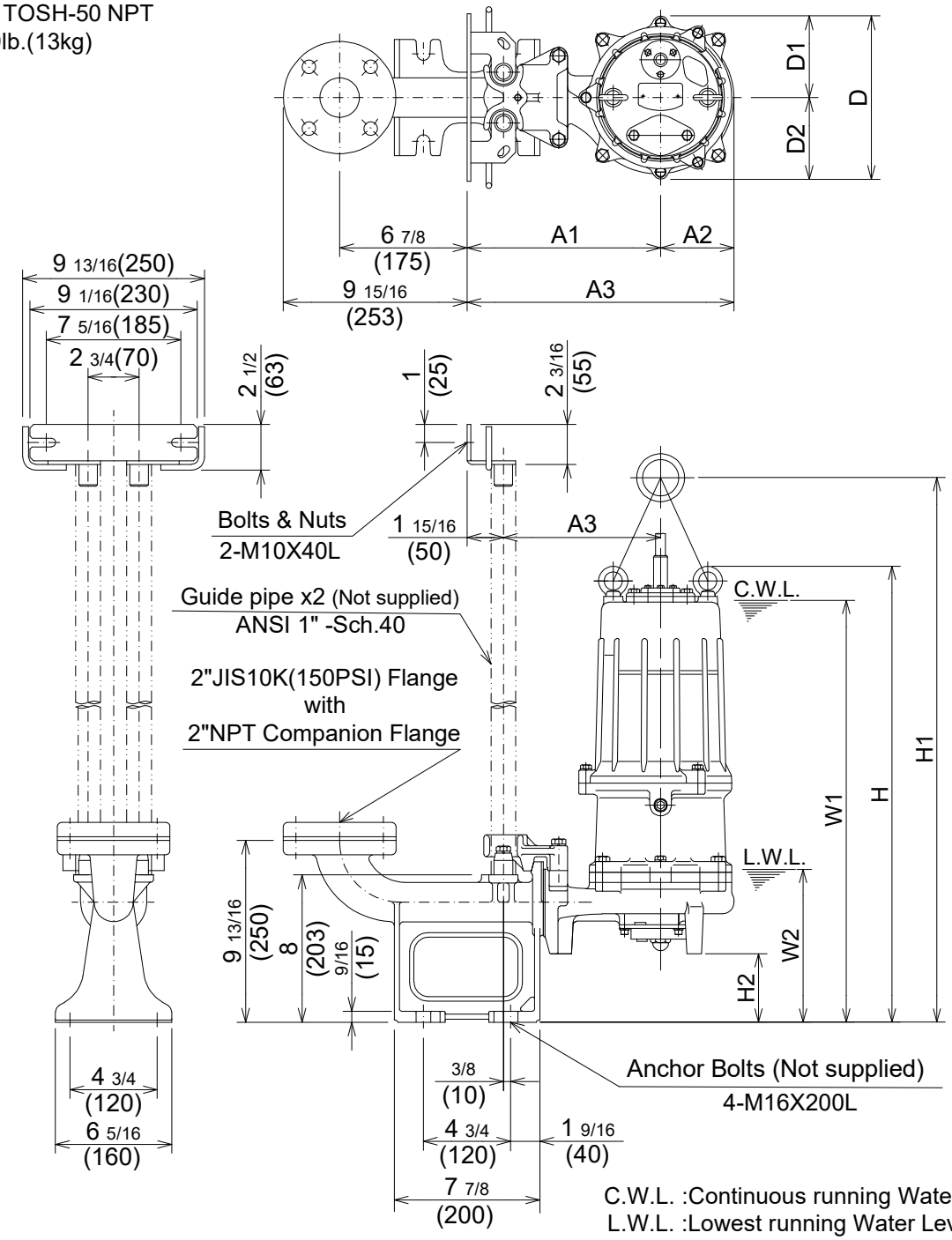
TSURUMI PUMP | MG-SERIES GRINDER PUMPS | DIMENSIONS

TOS50MG22.2 -64
TOS50MG23.7 -64

Guide Rail System
Model : TOSH-50 NPT
Wt. : 29lb.(13kg)



C.W.L. :Continuous running Water Level
L.W.L. :Lowest running Water Level

DIMENSIONS:USCS (Inch)

Model	HP	NOM.	Pump & Motor										C.W.L.	L.W.L.	Wt.*
		SIZE	A	A1	A2	A3	D	D1	D2	H	H1	H2	W1	W2	(lbs.)
TOS50MG22.2 -64	3	2"	14 7/16	10 1/2	4	8 1/2	8 7/8	4 7/16	4 7/16	24 11/16	29 1/2	3 11/16	22 7/8	8 1/4	161
TOS50MG23.7 -64	5	2"	14 7/16	10 1/2	4	8 1/2	8 7/8	4 7/16	4 7/16	24 11/16	29 1/2	3 11/16	22 7/8	8 1/4	163

DIMENSIONS:METRIC (mm) * Excluding TOS & Cable

Model	kW	NOM.	Pump & Motor										C.W.L.	L.W.L.	Wt.*
		SIZE	A	A1	A2	A3	D	D1	D2	H	H1	H2	W1	W2	(kg)
TOS50MG22.2 -64	2.2	50	367	266	101	216	226	113	113	627	749	94	580	210	73
TOS50MG23.7 -64	3.7	50	367	266	101	216	226	113	113	627	749	94	580	210	74

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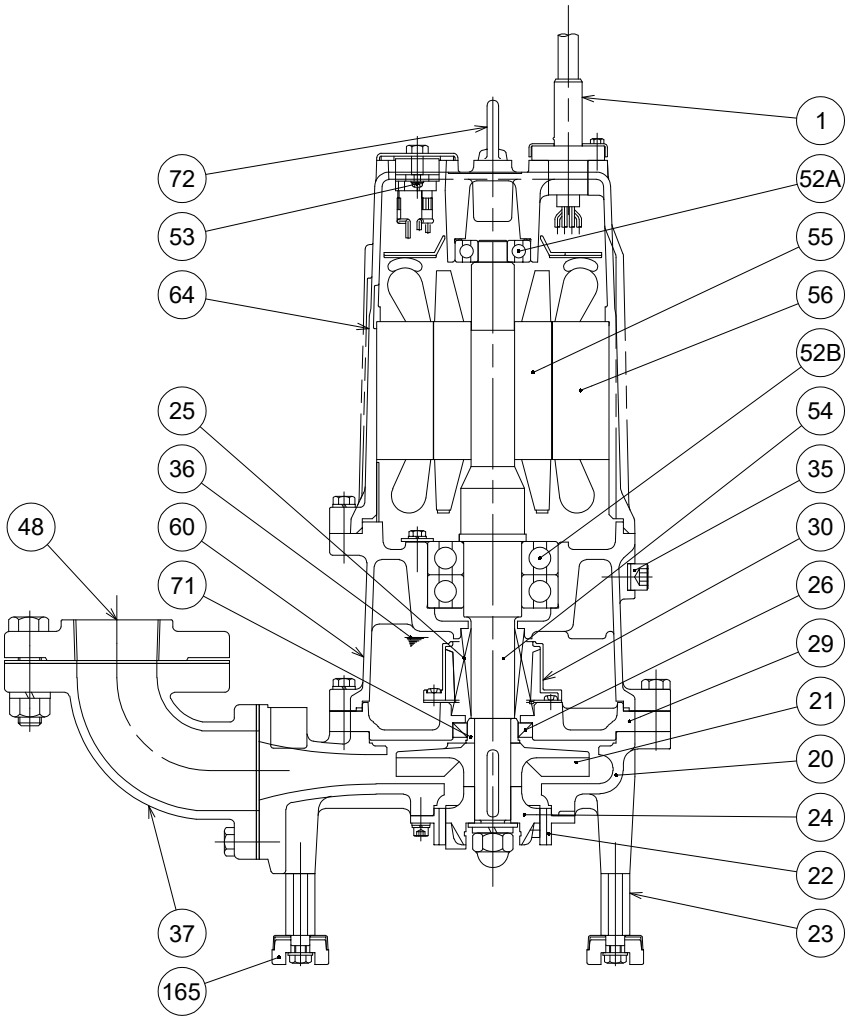
TSURUMI PUMP

MG SERIES
GRINDER PUMPS

SECTIONAL VIEW

50MG22.2 -64



PART#	DESCRIPTION	MAIN MATERIAL / NOTE	ASTM, AISI CODE	RELATED DIN CODE	QTY
1	Power Cable	PVC Sheath AWG 14/4-32ft			1
20	Pump Casing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
21	Impeller	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
22	Stationary Blade	High Chrome Cast Iron (hardened)	A532 Class III TypeA	DIN 1695 G-X260Cr27	1
23	Pump Stand	Stainless Steel	S 41000	1.4006	3
24	Rotationary Blade	High Chrome Cast Iron (hardened)	A532 Class III TypeA	DIN 1695 G-X260Cr27	1
25	Mechanical Seal	Silicon Carbide / H-30			1
26	Oil Seal	Nitril Butadiene Rubber / TC355511			1
29	Oil Casing	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
30	Oil Lifter	PBT Plastic W/GF40			1
35	Oil Plug	Stainless Steel	S 30400	1.4301	1
36	Lubricant	Turbine Oil ISO VG32 or SAE 10W-20			
37	Discharge Bend	Cast Iron	A48M Class30B	EN 1561 GJL-200	1
48	Companion Flange	Cast Iron / NPT 2"	A48M Class30B	EN 1561 GJL-200	1
52A	Upper Bearing	#6304ZZC3			1
52B	Lower Bearing	#6308ZZD2C3			1
53	Motor Protector				1
54	Shaft	Stainless Steel	S 42000	1.4028	1
55	Rotor				1
56	Stator				1
60	Bearing Housing	Cast Iron	A48M Class25B	EN 1561 GJL-150	1
64	Motor Housing	Cast Iron	A48M Class25B	EN 1561 GJL-150	1
71	Shaft Sleeve	Stainless Steel	S 40300	1.4000	1
72	Lifting Lug Bolt	Stainless Steel	S 30400	1.4301	1
165	Rubber Cushion	Nitril Butadiene Rubber			3

TSURUMI PUMP	MG - SERIES SEMI-VORTEX - GRINDER PUMPS	SAMPLE SPECIFICATIONS

1. SCOPE OF SUPPLY -

Furnish and install TSURUMI Model _____ Submersible Pump(s). Each unit shall be capable of delivering _____GPM (_____m^3/min) at _____Feet (_____m) TDH. The pump(s) shall be designed to pump waste water, sewage or effluent containing _____ inch (_____mm) diameter solids without damage during operation. The pump(s) shall be designed so that the shaft power required (BHP)/(kW) shall not exceed The motor rated output throughout the entire operating range of the pump performance curve. The pump discharge size shall be____inch, (____mm).

2. MATERIALS OF CONSTRUCTION -

Construction of major parts of the pumping unit(s) including pump casing, impeller, and discharge elbow shall be manufactured from gray cast iron, ASTM A48 CLASS 35. Internal and external surfaces coming into contact with the pumpage shall be protected by a fused polymer coating. All exposed fasteners shall be stainless steel. All units shall be furnished with a discharge elbow with 150 lb. (10 kg/cm^2) flat face flange and NPT companion flange. Impellers shall be of the semi-vortex, solids handling design equipped with back pump out vanes and shall be slip fit to the shaft and key driven. The grinding units shall provide horizontal and vertical grinding action. Both rotating and stationary grinding units shall be hardened high chrome cast iron rated at 60 HRC. The pump casing shall incorporate an air relief port.

3. MECHANICAL SEAL -

All units shall be furnished with a dual inside mechanical shaft seal located completely out of the pumpage, running in a separate oil filled chamber and further protected by an exclusionary oil seal located between the bottom seal faces and the fluid being pumped. The oil chamber shall be fitted with a device that shall provide positive lubrication of top mechanical seal, (down to one third of the standard oil level). The device shall not consume any additional electrical power. Mechanical seals shall rated to preclude the incursion of water up to 42.6 PSI. (98.4 Ft.). Units shall have silicon carbide mechanical seal faces. Mechanical seal hardware shall be stainless steel.

4. MOTOR -

The pump motor(s) shall be _____Hp., _____ kW., _____V., 60 Hz., 3 Phase and shall be NEMA MG-1, Design Type B equivalent. Motor(s) shall be rated at _____ full load amps. Motor(s) shall have a 1.15 service factor and shall be rated for 20 starts per hour. Motor(s) shall be air filled, copper wound, class E insulated with built in thermal and over amperage protection for each winding. Motor shaft shall be 403 or 420 stainless steel and shall be supported by two permanently lubricated, high temperature ball bearings, with a B-10 life rating at best efficiency point of 60,000 hours. The bottom bearing shall be two row, double shielded, C3, deep groove type ball bearing. The top bearing shall be single row, double shielded, C3, deep groove type ball bearing. Motor housing and bearing housing shall be gray cast iron, ASTM A48 CLASS 30. Motors shall be suitable variable speed applications, utilizing a properly sized variable frequency drive.

5. POWER CABLE AND CABLE ENTRANCE -

The pump power cable shall be suitable for submersible pump applications. The cable entrance shall incorporate built in strain relief, a one piece, three way mechanical compression seal with a fatigue reducing cable boot. The cable entrance assembly shall contain an anti-wicking block to eliminate water incursion into the motor due to capillary wicking should the power cable be accidentally damaged.