

PARPO Series Submersible Pumps With Grinder Blade

APPLICATION:

- For removal of sewage from premises, small houses and buildings located at a distance and below the main sewer system.
- Removal of sewage from basements.
- Removal of sewage from hotels, motels, restaurants, holiday villages and seaside premises.
- For petrol stations, garages and motorway service stations.
- For drainage purposes.
- Removal of fibrous waste from purifying plants.
- For slaughter houses, paper plants, food processing plants, agricultural and similar fields.

FLUID TYPES:

- Unscreened sewage and other waste water types with high solids concentration. Feces, food remnants, tissue paper, plastic solids and other organic solids, hair and alike fibrous material, fabrics in these water types shredded into small dimensions to prevent clogging of pipes.
- Can not be used for water with hard solid contaminants like bone.
- Water with sand content (Maximum grain size 3-4 mm) can be pumped with Parpo series pumps. Abrasiveness of sand may reduce the lifetime of the pump, in order to reduce the abrasive affect sand filters must be used.
- Maximum allowed medium temperature is 40 l°C, maximum allowed medium density is 1,2 gr/cm3, maximum allowed medium viscosity is 1,5 x 10-6 m²/s.
- Parpo series pumps can not be used for pumping flammable and explosive fluids.
- Like all Turbosan submersible pumps Parpo series pumps must be connected to Turbosan STR-1 protection relay. If relay is not connected Turbosan warranty is not valid.

ADVANTAGES:

- Parpo series submersible pumps grinds large solids in the water in to smaller pieces by cutters located in front of impeller preventing pipe clogging.
- Reduced pipe and fitting installation cost
 - Reduced flow rate and absorbed power results in lower operation costs.
 - Flow velocity within smaller diameter pipe is higher which eliminates solid settlement and consequent clogging.

TECHNICAL DETAILS:

Parpo series pumps like other submersible pumps consists of two main components : Motor and hydraulic group. They can operate fully or partially submerged.

SUBMERSIBLE ELECTRIC MOTOR :Turbosan DEM type submersible electric motor operates with 3 phase 380 V (+/- % 5) power supply. Parpo 40 N-140 M is suitable for single phase 220 V power supply. Insulation class of motors is F, protection class is IP 68. Cooling : External cooling by surrounding medium. Stator windings protected against over heating by 120 °C thermistors.

BEARINGS : Rotor is supported by means of two heavy duty ball bearings. Bearings are grease lubricated, no need for maintenance for 2 years of operation time.

SHAFT SEALING: Between motor and pumped fluid high quality mechanical seal is used, seals operate in oil chamber. Water leakage electrode in this oil chamber is for leakage warning.

MOTOR OVER HEAT PROTECTION SYSTEM : Stator windings protected against over heat by 120 l°C termistors. Two thermistor contacts are connected to cable and and must be connected to the thermistor relay.



Shredder Blade

PUMP IMPELLER AND SHREDDER BLADE SYSTEM :

Shredder blade system which is made of high quality hardened steel is located in front of the pump impeller. Stationary blade has several sharp waved edges and catches which grab solids. Rotating blade is fixed just in the center of impeller, it rotates together with impeller and sharp edges shreds the solids grabbed by stationary blade. Any solid has to pass through cutter blades two times before reaching impeller. As a result solids reaches impeller after being shredded in to smaller pieces. Pump impeller is semi-open type, the clearance between impeller and suction piece can be adjusted.

WATER LEAKAGE WARNING SYSTEM:

An electrode system is used which generates a warning signal in case of water leakage caused by worn out mechanical seal or any other reason. In order to have this system operational it must be connected to the Turbosan STR-1 protection relay.

CABLE CONNECTION :

Parpo series pumps have 4x2,5 + 3x1,5 rubber coated, H07RN-F type cables with flexible cores. Cable entry to the terminal box protected by rubber sleeves.

PUMP MATERIALS:

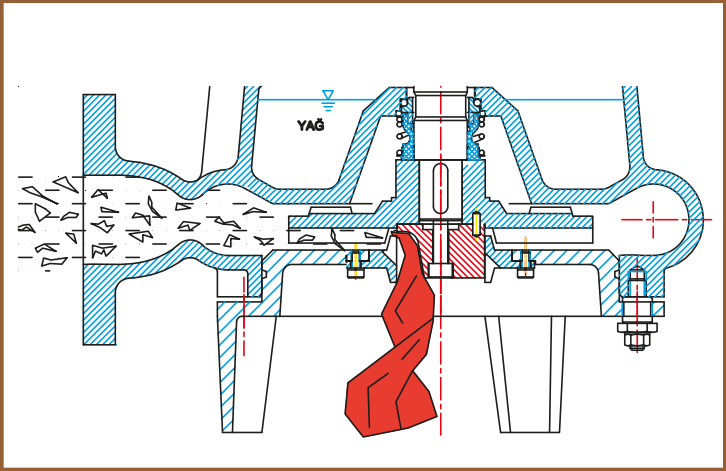
PUMP COMPONENTS:	MATERIAL:
Motor Stool - Volute Casing	Cast Iron GG-25
Rotor	Stainless Steel AISI-420
Impeller (Vortex)	Cast Iron GG-25
Bolts - Nuts	Stainless Steel
Stationary and Rotating Blade	Hardened machined special steel
Mechanical Seal	SIC/SIC - Q1Q1PGG
Cable	H07RN-f
Coating	Coal tar epoxy paint over Epoxy primer

IMPORTANT NOTICE ABOUT PARPO SERIES PUMPS

- Submersible pump start-stop frequency should not be more than 12 times per hour.
- If submersible pump will be stored for long period time without operation, it must be operated for short period of time every 20-25 days.
- Turbosan warraty is not valid if pump is not connected to STR-1 protection relay.

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OPERATING PRINCIPLE OF SHREDDER BLADE SYSTEM



PARPO 50 SUBMERSIBLE PUMP



PARPO 40 - PARPO 50 SERIES PERFORMANCE AND TECHNICAL DETAILS TABLE

Pump Model		Hm Manometric Head [mwc]											Motor Power kW	Speed rpm	WEIGHT KG.	Discharge Diameter
		2.5	5	7.5	10	12.5	15	17.5	20	22.5	25					
PARPO-40	N - 140	Capacity (m³/h)		18.8	17.8	17	15	13.2	11	8	5		2.2	2800	48	1½R
	N - 130			17	16	14	12	9.4	6.6	2.8		1.5	44			
	N - 120		16	15	13	11	8.4	5.5	2				1400	47		
	F - 170		25	20	10											
	F - 150		19.5	11												

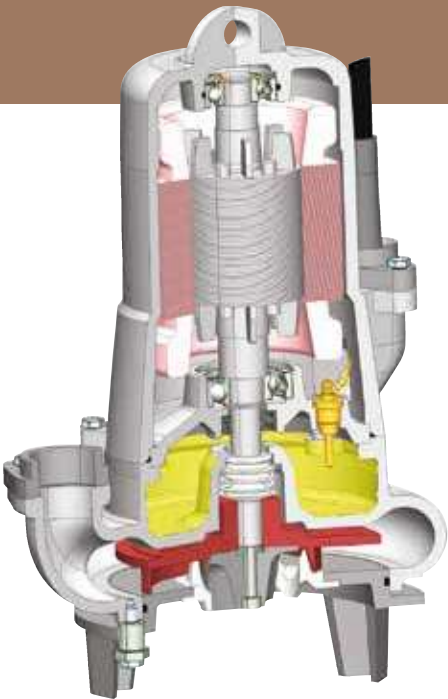
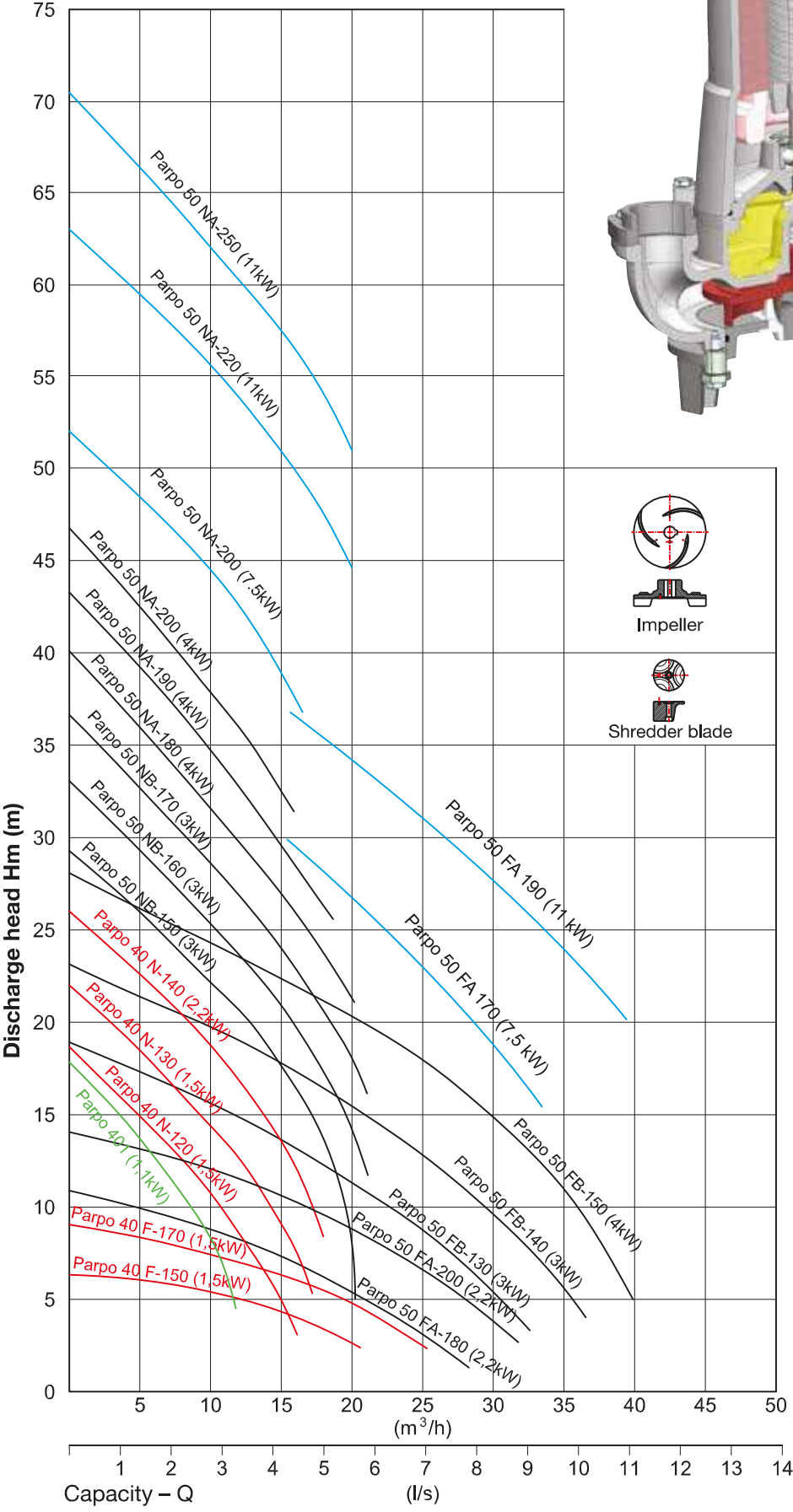
Pump Model		Hm Manometric Head [mwc]						Motor Power kW	Speed rpm	WEIGHT KG.	Discharge Diameter
		4	8	12	16	17					
PARPO 401	Debi Q m³/h	11.8	10	6.8	2.7	0		1.1	2850	28	Ø40

Pump Model		Hm Manometric Head [mwc]																		Motor Power kW	Speed rpm	WEIGHT KG.	Discharge Diameter				
		2.5	5	7.5	10	12.5	15	17.5	20	22.5	25	27.5	30	32.5	35	37.5	40	42.5	45								
PARPO-50	NA -200															12.6	10.5	8	5	2	4	2850	69	Ø50			
	NA -190											16.5	14.8	12.5	9.5	7	4	1									
	NA -180									18.5	16.8	14.2	11.6	9	6.2	2.8											
	NB -170							20.3	18.5	16.5	14	11	8.5	5.1	2						3	2850	68				
	NB -160					20.6	19.5	18	15.8	13	10.4	7.5	4	1													
	NB -150		20.3	20	19.5	18.5	17	15	12.5	9.5	6.5	2.5															
	FB -150		40	38	36.2	33	30	26	20.3	15	7.5	1									4	2850	67				
	FB -140		36	33	29	26	21	16	9.1	0.8																	
	FB -130		31	27	22.5	17.5	11.4	4													3		65				
	FA -200		32	28	22.5	16.5	8														2.2	1400	67				
FA -180		27	21	15	4.8																						

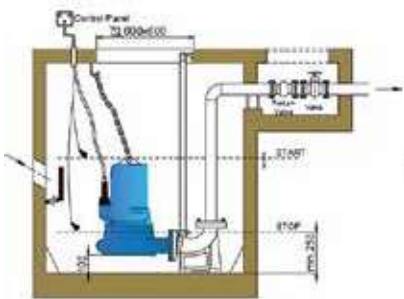
Pump Model		Hm Manometric Head [mwc]								Motor Power kW	Speed rpm	WEIGHT KG.	Discharge Diameter
		40	45	50	55	60	65	70	75				
PARPO-50	NA - 250			21.6	21	17	12	6.84		11	2850	132	Ø50
	NA - 220	Capacity-(m³/h)	23	20	15	10	4.7						
	NA - 200		14	9	3					7,5	2850	128	
	FA - 190	Hm[mwc]	37	34	31	27	24	20		11	2850	132	
		Q m³/h	15	20	25	30	35	38					
FA - 170		Hm[mwc]	30	27	24	18	16			7,5	2850	128	Ø50
		Q m³/h	15	20	25	30	32						

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PERFORMANCE CURVES

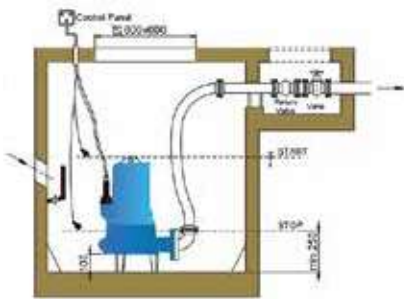


PARPO / INSTALLATION FORMS AND DIMENSIONS



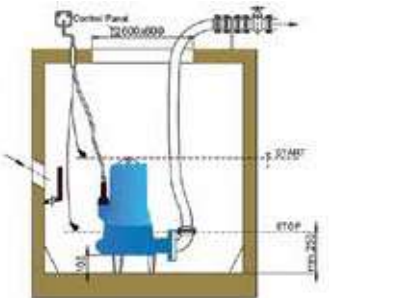
1- AUTOMATIC COUPLING (DUCK FOOT BEND)

(Only for PARPO 50 series)
It is an economic and practical installation for stationary systems. The automatic coupling system consists of a duck foot bend fixed on sump floor, guide rail (rectangular cross-section) and fixing flange which is fitted to the pump. The automatic coupling set components and discharge piping have to be installed before the sump get filled with a medium. Fixing flange which is fitted to the pump slides through the guide rails and pump lowered to the sump by means of chain. To take the pump out of the sump by pulling the pump by chain is enough, no dismantling or bolt removal is required.



2- VERTICAL FREE STANDING INSTALLATION WITH HOSE CONNECTION

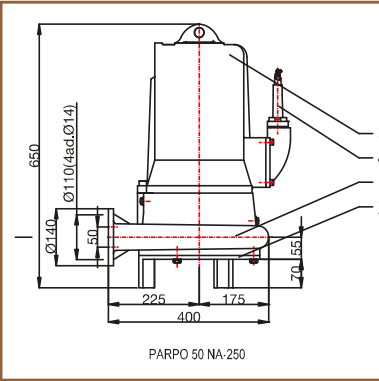
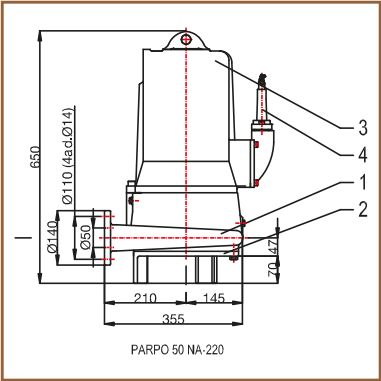
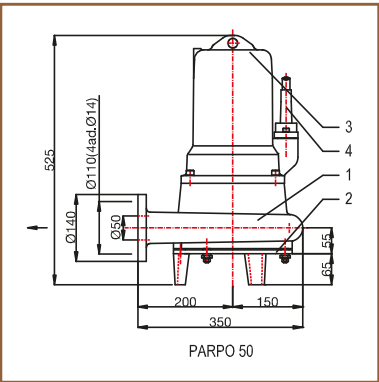
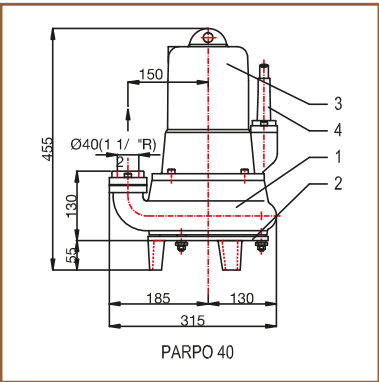
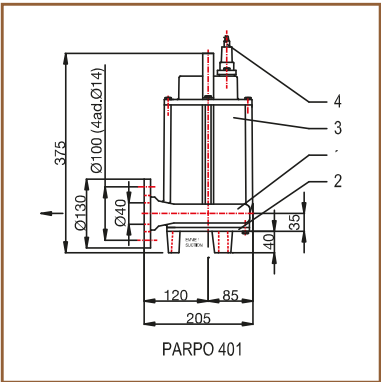
This installation can be applied to sumps with smooth, not inclined and clean floor. Threaded, clamped or dovetail type discharge unions are available hose connection options.



3- VERTICAL SUSPENDED PIPE CONNECTION

In this type of connection, all the mechanical components in the sump can be removed from the top opening of the sump. Flanged coupling bend is fixed to the side wall of the sump. The pump lowered sump with the support of discharge pipe and fixed to the flange of the pipe by means of bolts and nuts. The pump can be suspended in the sump without its feet touching the floor of the sump. This allows fitting of the pump to the sump filled with medium or sump with inclined and/or non smooth floor.

PARPO PUMPS EXTERIOR DIMENSIONS



PART LIST	
1	VOLUTE CASING
2	SUCTION PIECE
3	MOTOR CASING
4	CABLE