

# GM/GMVB

## Multi-stage Centrifugal Pump

# Drive

The pumping unit is normally driven by an air-cooled three-phase AC squirrel-cage motor of IEC standard, Class F Insulation, protection degree IP54.

Direction of rotation is clockwise when seen from drive side.

For standard C.I. pumps, cast steel casing are used for higher pressure

# Construction

Multi-stage centrifugal pumps GM/GMVB are of sectional casing type with closed impellers which are statically and dynamically balanced. The several interstage casings are sealed by "O"-ring joints and axially tightened by external tie bolts. Suction flanges are according to DIN2533, PN16 and discharge port flanges are according to DIN2535 PN 40. Suction flange on the right and close to the coupling and the discharge flange is at the other end and at top. Both suction and discharge flange can be turned with 90° angles on size 32-40-50 and 65.

Axial balance is secured by back wearing ring \*balancing hole system in standard production. Balancing disc or balancing drum is used for total head 200 meters or above.

GM/GMVB with multi discharge port design are widely used in fire service sprinkler system can also be provided against request.

Each produced GM/GMVB type pump is tested for static pressure 1.5 times more than closed valve pressure (0 flow) and is also tested for performance.



# Bearings

- Ball bearings (grease lubricated) for both gm/gmvb.
- Oil lubrication is an available option.

# Shaft Sealing

- Uncooled single stuffing box packing (S1)
- Uncooled double stuffing box packing (S2)
- Mechanical seal in accordance with DIN 24960 (GN)





## Application

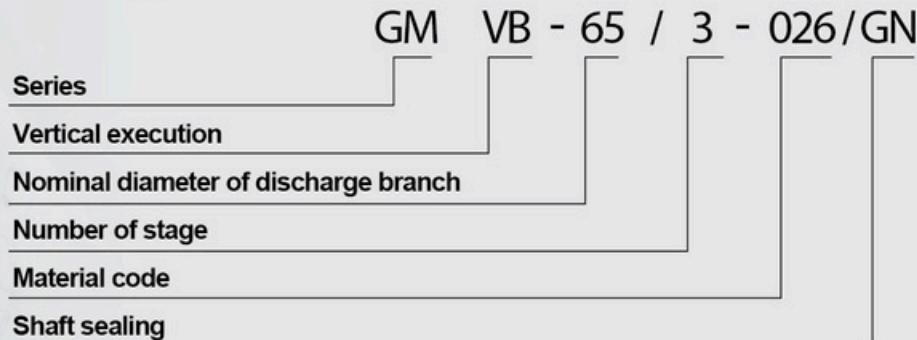
Multi-stage centrifugal pumps of the GM/GMVB series are designed for pumping clear resp. slightly turbid liquids without abrasives. A broad range of materials are a variety of shaft sealing systems render this kind of pump suitable for use on a wide range of applicants:

- Water supply installations
- Circulating and condensing plants
- Booster systems
- Power supply plant
- Sprinkling installations
- Mines
- Boiler feed

## Operating Data

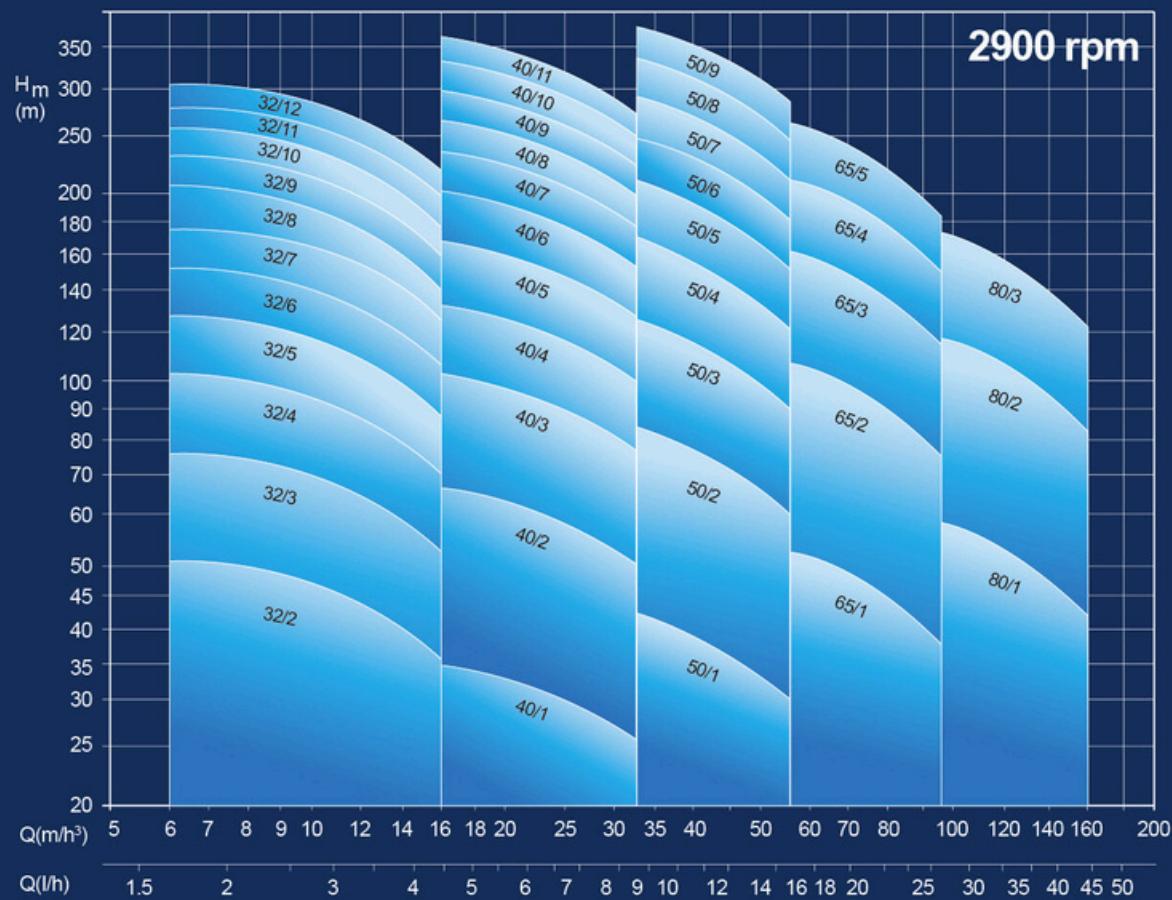
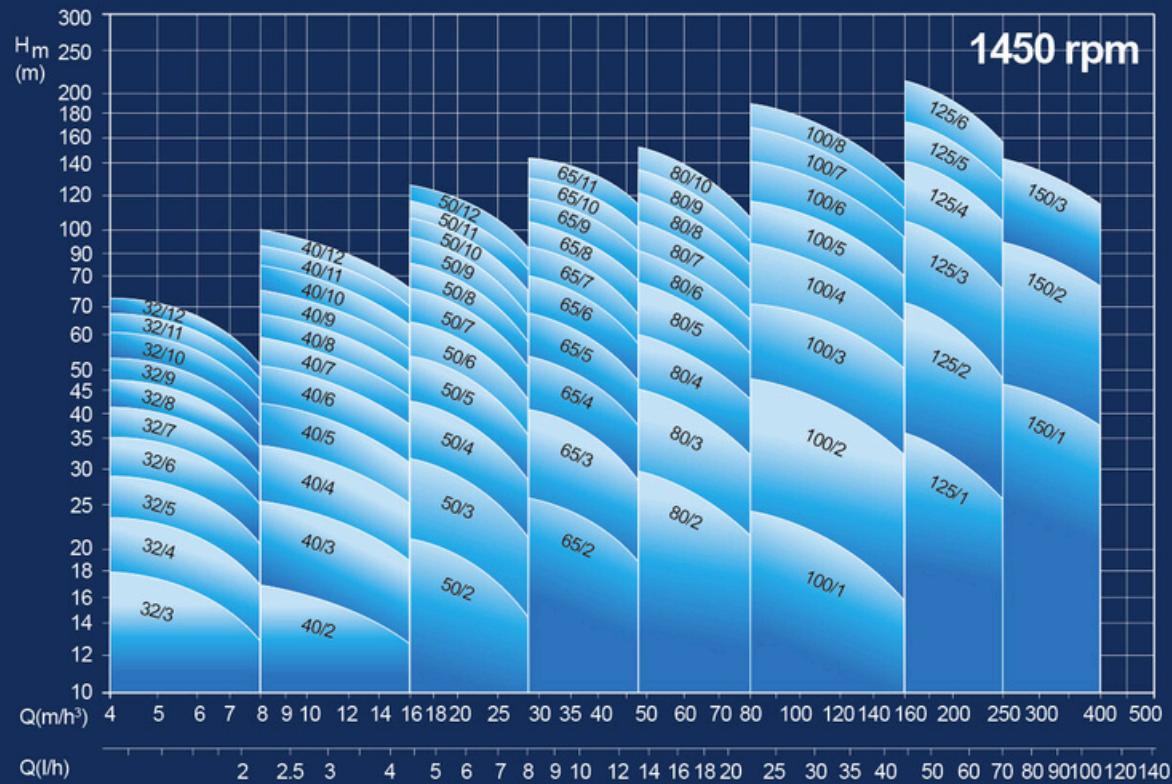
<b>Flow Rate</b>	.....	max. 700 m <sup>3</sup> /h
<b>Total Head</b>	.....	50~ 300m
<b>Speed</b>	.....	max. 3600 rpm
<b>Pumping Temperature</b>	.....	≤ 140°C
<b>Casing Pressure</b>	.....	30 bar*
<b>Size</b>	.....	32...200mm

## Designation



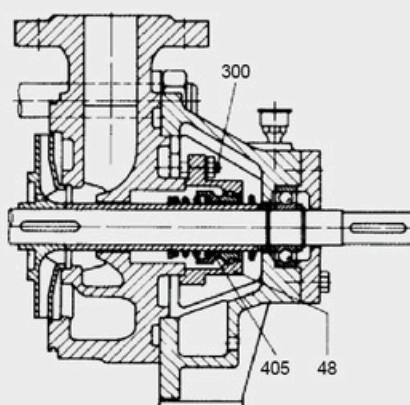
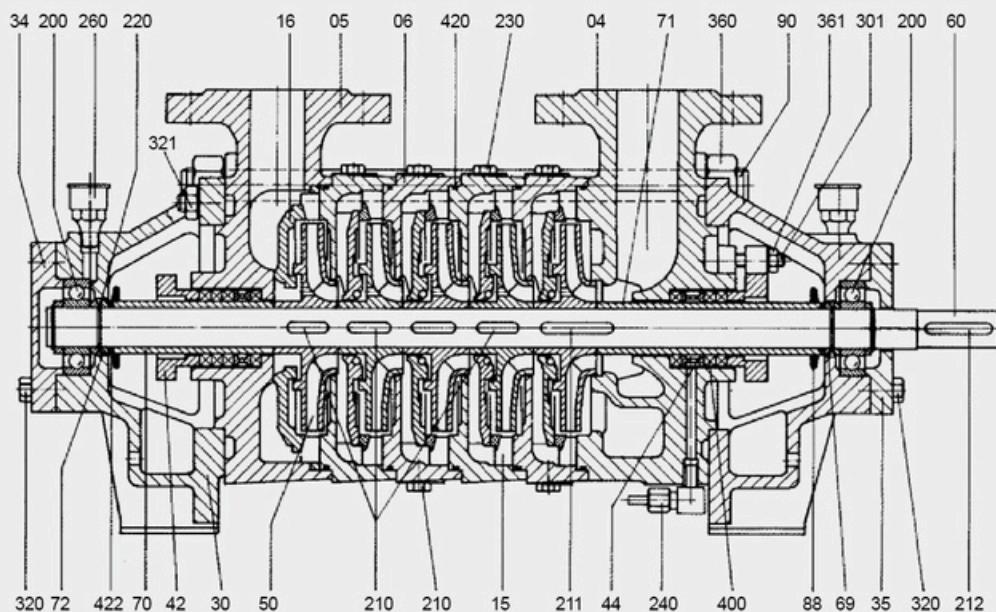
# GM/GMVB

**MMB**  
Morsbach Maschinen Bau GmbH.

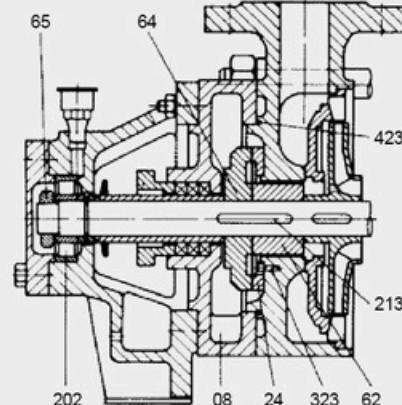


# GM

## Sectional Drawing & Part List (size 32-65)



Mechanical Seal Application

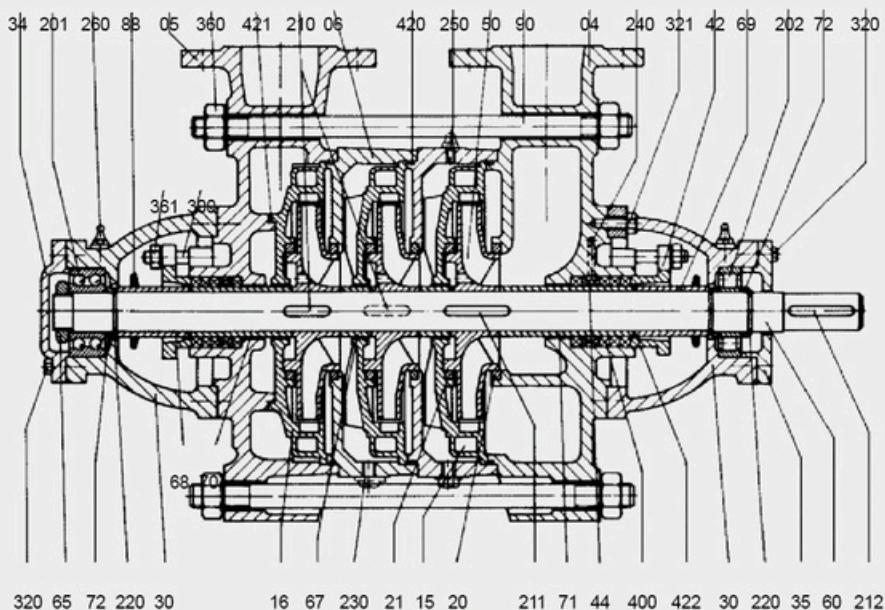


Balance Disc Application

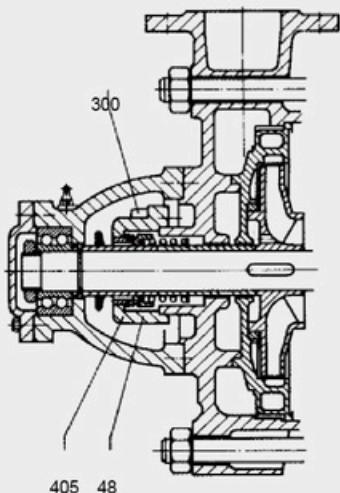
Part No.	Designation	Part No.	Designation	Part No.	Designation	Part No.	Designation
04	Suction Casing	42	Stuffing box. Gland	80	Thrower	260	Oil Plug
05	Discharge Casing	44	Lantern Ring	90	Tiebolt	261	Oil Level Indicator
06	Stage Casing	48	Mach. Seal Cover	200	Ball Bearing	300	Stuffing Box Stud
08	Balance Disc Casing	50	Impeller	201	Ball Bearing	320	Hex. Head Bolt
15	Diffuser	60	Shaft	202	Roller Bea.	322	Hex. Head Bolt
16	Final Stage Diffuser	62	Balance Bushing	210	Impeller Key	323	Imbus Head Bolt
20	Casing Wear Ring	64	Balance Disc	211	First Stage Key	360	Hex. Nut
21	Back Wear Ring	65	Shaft End Nut	212	Coupling Key	361	Hex. Nut
23	Balance Drum Body	66	Shaft Nut (Coup. Side)	213	Disc Key	400	Stuffing Box Packing
24	Balance Disc Seat	67	Stage Sleeve	220	Retaining Ring	405	Mechanical Seal
30	Bearing Housing	68	Spacer Sleeve	230	Plug	410	Oil Seal Ring
31	Bearing Housing (Oil)	69	Spacer Sleeve	231	Oil Drain Plug	420	O-Ring
34	Bearing End Cover	70	Shaft Sleeve (End)	240	Seal Piping	421	O-Ring
35	Bearing Cover	71	Shaft Sleeve (Coup.)	241	Nipple	422	O-Ring
40	Stuff. Box Cooling ch	74	Space Sleeve	250	Vent Cock	423	O-Ring

# GM

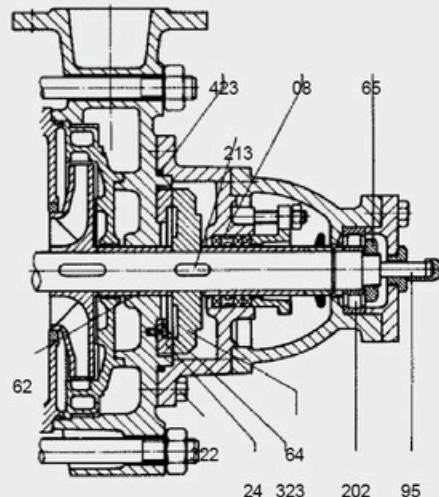
## Sectional Drawing & Part List (size 80-200)



Part numbers visible in the main drawing: 34, 201, 260, 88, 05, 360, 421, 210, 06, 420, 250, 50, 90, 04, 240, 321, 42, 69, 202, 72, 320, 320, 65, 72, 220, 30, 16, 67, 230, 21, 15, 20, 211, 71, 44, 400, 422, 30, 220, 35, 60, 212.



Mechanical Seal Application

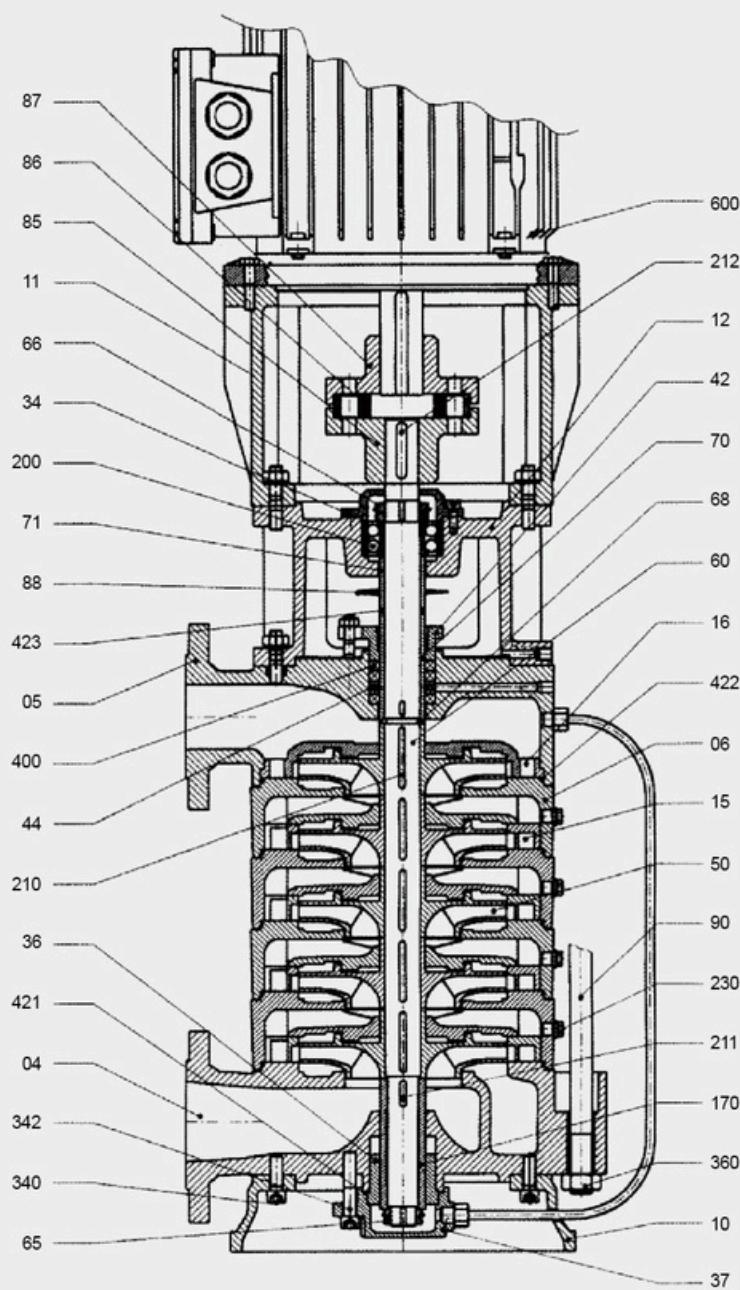


Balance Disc Application (Hm>200m)

Part No.	Designation	Part No.	Designation	Part No.	Designation	Part No.	Designation
04	Suction Casing	42	Stuffing box. Gland	80	Thrower	260	Oil Plug
05	Discharge Casing	44	Lantern Ring	90	Tiebolt	261	Oil Level Indicator
06	Stage Casing	48	Mach. Seal Cover	200	Ball Bearing	300	Stuffing Box Stud
08	Balance Disc Casing	50	Impeller	201	Ball Bearing	320	Hex. Head Bolt
15	Diffuser	60	Shaft	202	Roller Bea.	322	Hex. Head Bolt
16	Final Stage Diffuser	62	Balance Bushing	210	Impeller Key	323	Imbus Head Bolt
20	Casing Wear Ring	64	Balance Disc	211	First Stage Key	360	Hex. Nut
21	Back Wear Ring	65	Shaft End Nut	212	Coupling Key	361	Hex. Nut
23	Balance Drum Body	66	Shaft Nut (Coup. Side)	213	Disc Key	400	Stuffing Box Packing
24	Balance Disc Seat	67	Stage Sleeve	220	Retaining Ring	405	Mechanical Seal
30	Bearing Housing	68	Spacer Sleeve	230	Plug	410	Oil Seal Ring
31	Bearing Housing (Oil)	69	Spacer Sleeve	231	Oil Drain Plug	420	O-Ring
34	Bearing End Cover	70	Shaft Sleeve (End)	240	Seal Piping	421	O-Ring
35	Bearing Cover	71	Shaft Sleeve (Coup.)	241	Nipple	422	O-Ring
40	Stuff. Box Cooling ch	74	Space Sleeve	250	Vent Cock	423	O-Ring

# GMVB

## Sectional Drawing & Part List



Part No.	Designation	Part No.	Designation	Part No.	Designation
04	Suction Casing	50	Impeller	200	Ball Bearing
05	Discharge Casing	60	Shaft	210	Impeller Key
06	Stage Casing	65	Shaft Locking Nut+Washer	211	Sleeve Key
10	Pump Foot	66	Shaft Locking Nut+Washer	212	Coupling Key
11	Motor Pedestal	68	Split Ring	230	Plug
12	Bearing Housing	70	Shaft Sleeve	340	Hollow-Head Cap Screw
15	Diffuser	71	Space Sleeve	342	Hollow-Head Cap Screw
16	Final Stage Diffuser	85	Coupling (Pump)	360	Hex. Nut
34	Bearing Cover	86	Coupling Rubber	400	Stuffing Box Packing
36	Bottom Bearing	87	Coupling (Motor)	421	O-Ring
37	Lower Housing Cover	88	Thrower Ring	422	O-Ring
42	Gland	89	Tie Bolt	423	O-Ring
44	Lantern Ring	170	Shaft Sleeve	600	Electric Motor

# GM/GMVB

## Material combination

**MMB**  
Morsbach Maschinen Bau GmbH.

Designation	Part No.	Code			
		006	013	026	100
Suction Casing	04		GG-25		GGG-40
Delivery Casing	05		GG-25		GGG-40
Stage Casing	06		GG-25		GGG-40
Diffuser	15	G.CuSn10		GG-25	
Shaft	60	1.4401		1.4301	
Impeller	50	G.CuSn10	GG-25	G.CuSn10	GG-25
Bearing Housing	30		GG-25		
Stuffing Box Gland	42		GG-25		
Mechanical Seal Cover	48		G.CuSn7 ZnPb		
Casing Wear Ring	20		G.CuSn7 ZnPb		GGLZ-320NiCr
Interstage Sleeve	67		G.CuSn5 ZnPb		GGLZ-320NiCr
Shaft Sleeve	70	G.CuSn10		G.CuSn7 ZnPb	
Tie Bolt	90		St 50-2		
Key	210	1.4301	St 50-2		1.4301
Gland Packing	400		PTFE Graphite in stream		
Mechanical Seal	405		ASVGG		

Designation	Part No.	Code			
		206	308	508	528
Suction Casing	04	G.CuSn10	GS-C25		1.4408
Delivery Casing	05	G.CuSn10	GS-C25		1.4408
Stage Casing	06	G.CuSn10	GS-C25		1.4408
Diffuser	15	G.CuSn10		1.4408	
Shaft	60	1.4401		1.4301	1.4401
Impeller	50	G.CuSn10		1.4408	
Bearing Housing	30		GG-25		1.4408
Stuffing Box Gland	42	G.CuSn7 ZnPb	GG-25		1.4057
Mechanical Seal Cover	48	G.CuSn5 ZnPb		1.4878	
Casing Wear Ring	20	G.CuSn5 ZnPb		1.4138	
Interstage Sleeve	67	G.CuSn5 ZnPb		1.4301	
Shaft Sleeve	70	G.CuSn10		1.4301	
Tie Bolt	90		St 50-2		1.4301
Key	210		1.4301		
Gland Packing	400		PTFE		
Mechanical Seal	405		ASVGG		

