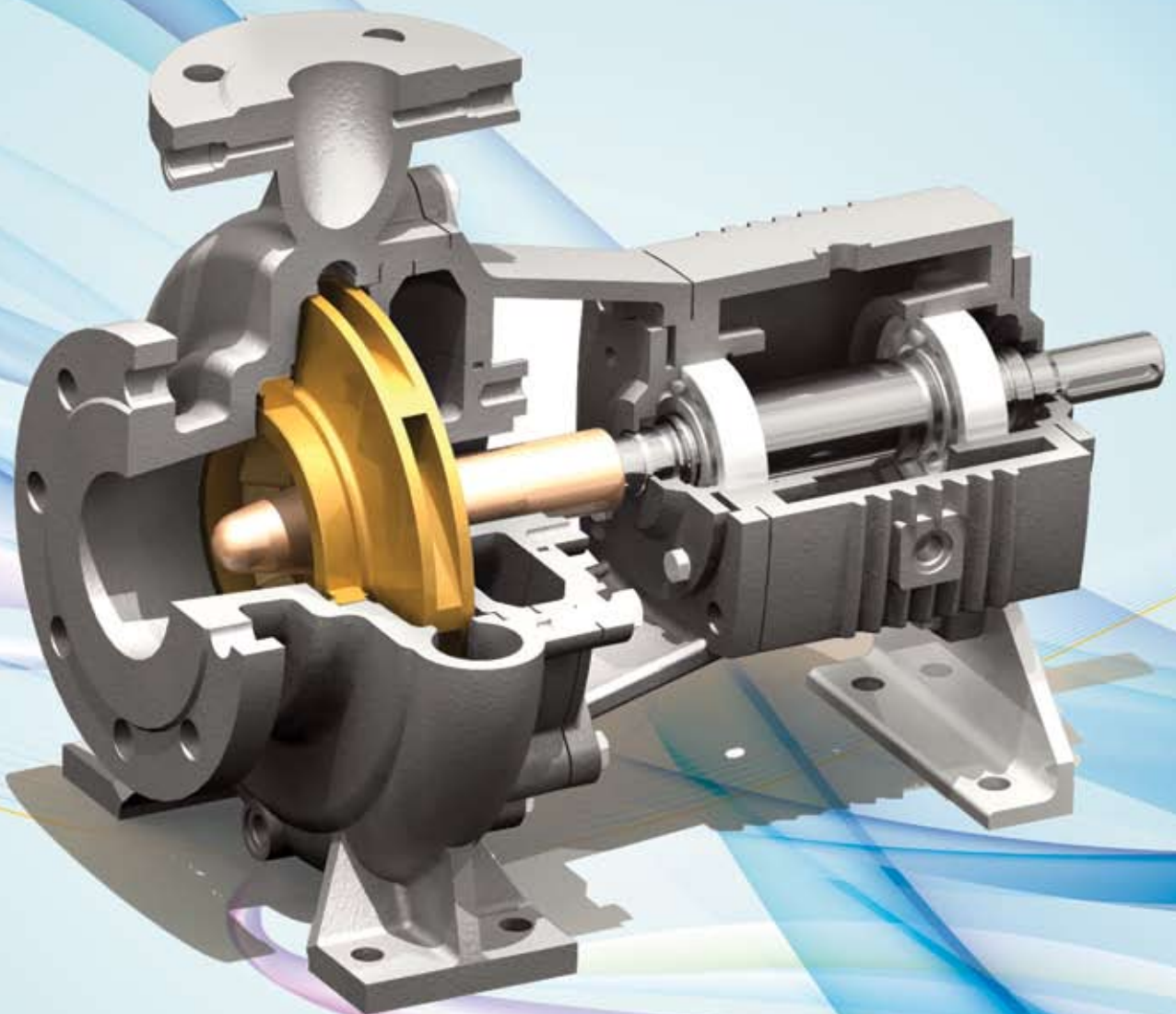


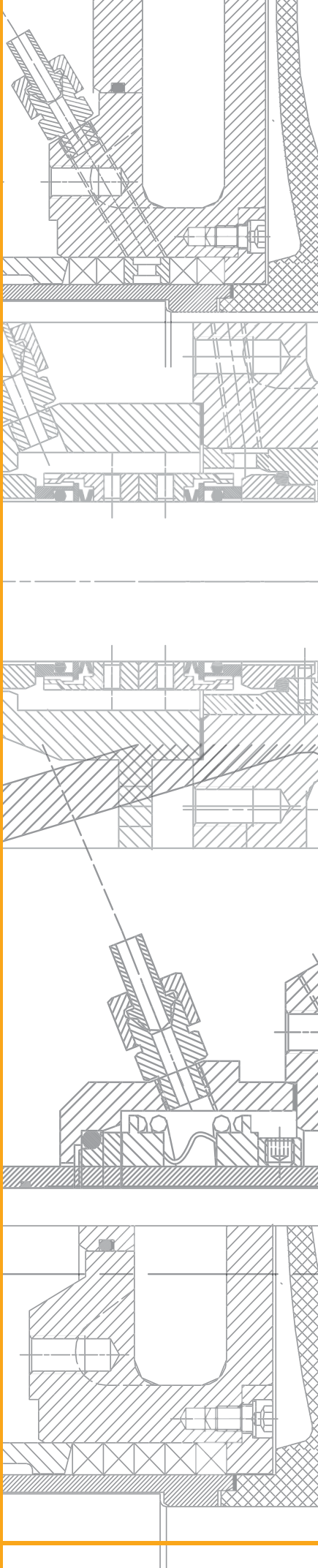


PUMP YOUR WAY TO SUCCESS



END SUCTION CENTRIFUGAL PUMPS- SCP

Catalog 2009



MZT Pumpi a.d is one of the leading manufacturers of industrial pumps in the region of South-East Europe. With its extensive experience of more than 60 years, justified with existence of broad product range, it continuously strives to satisfy the utmost needs of the customer.

The key elements to survive in this globalized market are flexibility towards market changes and ability to innovate-both in product designs as well as business processes. By following the worldwide development in the pump industry, our staff constantly faces with the growing challenge to keep abreast of the numerous innovations in pump designs and this is justified by having a separate R&D department.

The basic objective of MZT Pumpi is expanding the business partnerships and building the brand name of our products worldwide. All of our employees live up to our motto: "Pump your way to success".

CONTENT

| | |
|---|---|
| GENERAL INFORMATION | 4 |
| TECHNICAL DATA - MAIN PARTS | 5 |
| TECHNICAL DATA - BEARINGS | 6 |
| TECHNICAL DATA - FLANGE CONNECTIONS | 7 |
| TECHNICAL DATA - SHAFT SEALING | 8 |
| TECHNICAL DATA - INSTALLATION DIMENSIONS | 9 |

GENERAL INFORMATION

Application

For liquid transfer and circulation of cold and hot clean or slightly polluted water, for handling aggressive organic and inorganic liquids in the chemical and petrochemical industries.

Typical applications in:

- Municipal water supply
- The paper and cellulose industries
- Food staffs industry
- Domestic water supply
- Industrial plants
- Boiler feed and condensate systems
- Irrigation and dewatering
- General purposes and ets.

Design

Horizontal, radial split volute casing pump in back pull-out design, with radial impeller, single entry, single stage, centrifugal end-suction pump with flanged bearing frame, suitable for flexible coupling to electric motor or internal combustion engine as a driver. High operating reliability due to maintenance and service optimized parts.

Designation

Example: SCP 50-315
 Pump type SCP
 Discharge DN [mm] 50
 Nominal impeller diameter [mm] 315

Operating Range

Capacity Q: up to 2500 m³/h 700l/s
 Heads H: up to 150m
 Pump size DN 32 to 400
 Operating pressure p: up to 25 bar
 Operating temperatures t: -40 to +400



| Pos. | Component | Material | Optional mat. |
|------|-----------------|----------|--------------------------|
| 1. | Pump case | GG | GGG,CS,SS,DSS,SDSS,BR |
| 2. | Impeller | GG | GGG,CS,SS,DSS,SDSS,BR |
| 3. | Shaft | SS | SS |
| 4. | Shaft sleeve | SS | SS,DSS,SDSS |
| 5. | Bearing bracket | GG | GG,GGG,CS,GGG,CS,SS,DSS, |
| 6. | Pump cover | GG | SDSS,BR |

Legend:

GG - Cast iron
 GGG - Ductile iron
 CS - Cast steel
 SS - Stainless steel
 DSS - Duplex stainless steel
 SDSS - Super duplex stainless steel
 BR - Bronze

Balancing

Axial thrust is balanced by back vanes on DN > 400 and sealing gap on both sides if impeller diameter >500.

Shaft Sealing

The shaft sealing could be arranged by soft packing or mechanical seal.

In soft packing arrangements the shaft is protected by replaceable, stainless sleeve while the stuffing box is furnished with lantern ring for introduction of cooling liquid into the packing.

On special demand the pumps could be furnished with mechanical seal in accordance with the characteristics of the liquid and the operating conditions. Single mechanical seals are according EN 12756 (DIN 24960)

Conversion from the gland packing to the mechanical seal is possible without any rework on the casing cover by using the relevant replacement parts.

Back pull out design

Back pull out design is attainable on special demand. The Back Pull Out design greatly facilitates maintenance of the SCP pumps.

Forces and Moments

SCP pumps are designed for handing and moments in accordance with ISO 5199

Testing and Guarantees

- Material certificates: EN 10204
- Hydrostatic test: 150 % over nominal pressure
- Performance tests: in accordance with ISO 9906

Warranties are given within the scope of the valid delivery conditions

TECHNICAL DATA - MAIN PARTS

Wear rings

Front and back (in case of impeller dia. >500mm) renewable wear rings are furnished in order to achieve the best pump performance and ease the maintenance.

Pump case

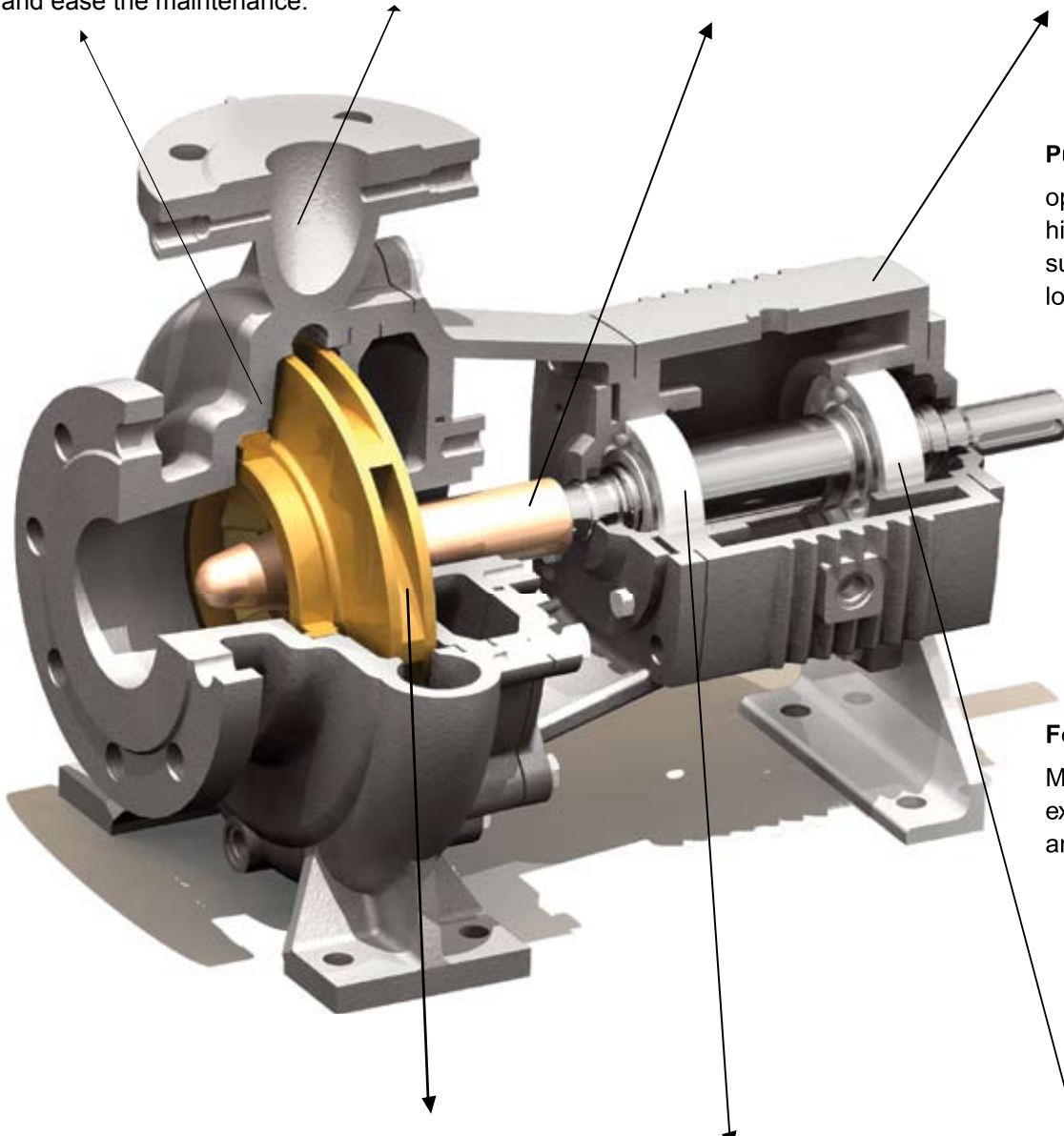
The pump case is of rigid design with a generous wall thickness, giving good protection against erosion and corrosion.

Shaft sealing

SCP pumps can be fitted with most sealing arrangements:
-soft packing
-mechanical seal

Shaft bearing bracket

The heavy duty console with incorporated lantern assures silent and reliable operation.



Pump performance

optimized volute design
high efficiency, smooth surfaces, minimal internal losses

Foot

Machined foot assure exact positioning on baseplate and in pipework

Impeller Back vanes

for hydraulic balancing, extending bearing life, keeps solid parts away from shaft sealing area

Impeller

Fully enclosed, single-piece casting gives reliability, long trouble-free operation and high efficiency.

Shaft

The shaft is protected by a replaceable shaft sleeve in stainless steel.

Bearings

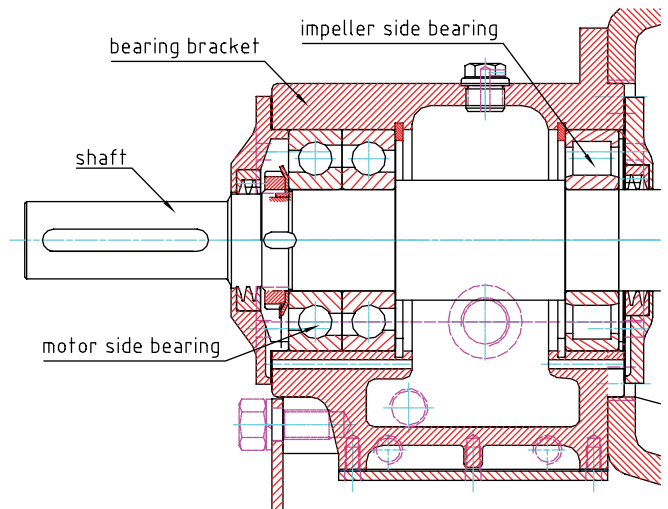
Ample dimensioned single and double row ball bearings improve the stiffness and minimize shaft deflection.

TECHNICAL DATA - BEARINGS

■ Bearing bracket size

There are different bearing bracket size according to different size of the pump

| Outlet nozzle [mm] | Nominal impeller diameter | | | | | | | |
|--------------------|---------------------------|-----|-----|-----|-----|-----|-----|-----|
| | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 650 |
| 32 | BB1 | BB1 | BB1 | BB2 | | | | |
| 40 | | BB1 | BB1 | BB2 | BB2 | | | |
| 50 | | BB1 | BB1 | BB2 | BB2 | | | |
| 65 | | BB2 | BB2 | BB2 | BB3 | | | |
| 80 | | BB2 | BB2 | BB2 | BB3 | BB3 | | |
| 100 | | | BB2 | BB3 | BB3 | BB3 | | |
| 125 | | | | BB3 | BB3 | BB3 | | |
| 150 | | | | BB3 | BB4 | BB4 | BB4 | BB6 |
| 200 | | | | BB4 | BB4 | BB4 | BB4 | |
| 250 | | | | | BB4 | BB5 | BB5 | BB7 |
| 300 | | | | | | BB6 | BB6 | BB7 |
| 350 | | | | | | BB6 | BB6 | BB8 |



- The bearing assembly includes three bearings oil lubricated, improve the stiffness and minimize shaft deflection
- All the pumps are covered by several sizes of shaft, shaft seal and bearings
- Due to the ample sizes of the bearings and shafts, pumps can have several types of bearing bracket
- Shaft is carried by, on impeller side cylindrical roller bearing and on a two ball bearing, oil lubricated. Bearing covers on both sides with ring seals.

Motor side bearings

| Outlet nozzle [mm] | Nominal impeller diameter | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|
| | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 650 |
| 32 | 2 x 7307 | 2 x 7307 | 2 x 7307 | 2 x 7307 | - | - | - | - |
| 40 | | 2 x 7307 | 2 x 7307 | 2 x 7307 | 2 x 7307 | - | - | - |
| 50 | | 2 x 7307 | 2 x 7307 | 2 x 7307 | 2 x 7307 | | | |
| 65 | | 2 x 7307 | 2 x 7307 | 2 x 7307 | 2 x 7311 | | | |
| 80 | | 2 x 7307 | 2 x 7307 | 2 x 7307 | 2 x 7311 | 2 x 7311 | | |
| 100 | | | 2 x 7307 | 2 x 7311 | 2 x 7311 | 2 x 7311 | | |
| 125 | | | | 2 x 7311 | 2 x 7311 | 2 x 7311 | | |
| 150 | | | | 2 x 7311 | 2 x 7313 | 2 x 7313 | 2 x 7313 | 2 x 7319 |
| 200 | | | | 2 x 7313 | 2 x 7313 | 2 x 7313 | 2 x 7313 | |
| 250 | | | | | 2 x 7313 | 2 x 7315 | 2 x 7315 | 2 x 7324 |
| 300 | | | | | | 2 x 7319 | 2 x 7319 | 2 x 7324 |
| 350 | | | | | | 2 x 7319 | 2 x 7319 | 2 x 7324 |

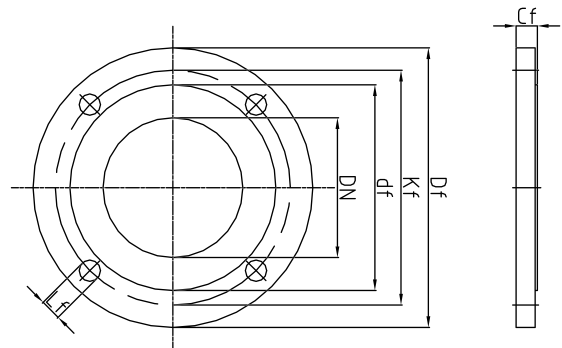
Impeller side bearings

| Outlet nozzle [mm] | Nominal impeller diameter | | | | | | | |
|--------------------|---------------------------|--------|--------|--------|--------|-------|-------|-------|
| | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 650 |
| 32 | NU307 | NU 307 | NU 307 | NU 307 | - | - | - | - |
| 40 | - | NU 307 | NU 307 | NU 307 | NU 307 | | | |
| 50 | - | NU 307 | NU 307 | NU 307 | NU 307 | | | |
| 65 | - | NU 307 | NU 307 | NU 307 | NU 311 | | | |
| 80 | - | NU 307 | NU 307 | NU 307 | NU307 | NU307 | | |
| 100 | | | NU307 | NU307 | NU307 | NU307 | | |
| 125 | | | | NU307 | NU307 | NU307 | | |
| 150 | | | | NU307 | NU313 | NU313 | NU313 | NU416 |
| 200 | | | | NU313 | NU313 | NU313 | NU313 | |
| 250 | | | | | NU313 | NU413 | NU413 | NU324 |
| 300 | | | | | | NU416 | NU416 | NU324 |
| 350 | | | | | | NU416 | NU416 | NU324 |

TECHNICAL DATA - FLANGE CONNECTIONS

Flange connection

- Suction connections flanges DIN EN 1092 PN 10
- Discharge connections flanges DIN EN 1092 PN 16



| Pump type | Suction connections flanges DIN EN 1092 PN 10 | | | | | |
|-----------|---|----|-----|-----|-----|--------|
| | DN | Cf | df | Kf | Df | Lf |
| 32-125 | 50 | 19 | 99 | 125 | 165 | 4xØ19 |
| 32-160 | | | | | | |
| 32-200 | | | | | | |
| 32-250 | 65 | 19 | 118 | 145 | 185 | 4xØ19 |
| 40-160 | | | | | | |
| 40-200 | | | | | | |
| 40-250 | | | | | | |
| 40-315 | 80 | 19 | 132 | 160 | 200 | 8xØ19 |
| 50-160 | | | | | | |
| 50-200 | | | | | | |
| 50-250 | | | | | | |
| 50-315 | | | | | | |
| 65-160 | 100 | 19 | 156 | 180 | 220 | 8xØ19 |
| 65-200 | | | | | | |
| 65-250 | | | | | | |
| 65-315 | | | | | | |
| 80-160 | 125 | 19 | 184 | 210 | 250 | 8xØ19 |
| 80-200 | | | | | | |
| 80-250 | | | | | | |
| 80-315 | | | | | | |
| 80-400 | | | | | | |
| 100-200 | 125 | 19 | 184 | 210 | 250 | 8xØ19 |
| 100-250 | | | | | | |
| 100-315 | | | | | | |
| 100-400 | | | | | | |
| 125-250 | 150 | 19 | 211 | 240 | 285 | 8xØ23 |
| 125-315 | | | | | | |
| 125-400 | | | | | | |
| 150-250 | 200 | 20 | 266 | 295 | 340 | 8xØ23 |
| 150-315 | | | | | | |
| 150-400 | | | | | | |
| 150-500 | | | | | | |
| 150-650 | | | | | | |
| 200-250 | 200 | 20 | 266 | 295 | 340 | 8xØ23 |
| 200-315 | | | | | | |
| 200-400 | | | | | | |
| 200-500 | | | | | | |
| 250-315 | 250 | 26 | 320 | 350 | 395 | 12xØ23 |
| 250-400 | | | | | | |
| 250-500 | | | | | | |
| 250-650 | | | | | | |
| 300-400 | | | | | | |
| 250-315 | 300 | 28 | 370 | 400 | 445 | 12xØ23 |
| 250-400 | | | | | | |
| 250-500 | | | | | | |
| 250-650 | | | | | | |
| 300-400 | | | | | | |
| 300-500 | 350 | 30 | 430 | 460 | 505 | 16xØ23 |
| 300-650 | | | | | | |
| 350-400 | | | | | | |
| 350-400 | 350 | 30 | 430 | 460 | 505 | 16xØ23 |
| 350-500 | | | | | | |
| 350-650 | | | | | | |
| 350-650 | 400 | 32 | 482 | 515 | 565 | 16xØ27 |

| Pump type | Discharge connections flanges DIN EN 1092 PN 16 | | | | | |
|-----------|---|----|-----|-----|-----|--------|
| | DN | Cf | df | Kf | Df | Lf |
| 32-125 | 32 | 18 | 76 | 100 | 140 | 4xØ19 |
| 32-160 | | | | | | |
| 32-200 | | | | | | |
| 32-250 | 40 | 19 | 84 | 110 | 150 | 4xØ19 |
| 40-160 | | | | | | |
| 40-200 | | | | | | |
| 40-250 | | | | | | |
| 40-315 | 50 | 19 | 99 | 125 | 165 | 4xØ19 |
| 50-160 | | | | | | |
| 50-200 | | | | | | |
| 50-250 | | | | | | |
| 50-315 | | | | | | |
| 65-160 | 65 | 19 | 118 | 145 | 185 | 4xØ19 |
| 65-200 | | | | | | |
| 65-250 | | | | | | |
| 65-315 | | | | | | |
| 80-160 | 80 | 19 | 132 | 160 | 200 | 8xØ19 |
| 80-200 | | | | | | |
| 80-250 | | | | | | |
| 80-315 | | | | | | |
| 80-400 | | | | | | |
| 100-200 | 100 | 19 | 156 | 180 | 220 | 8xØ19 |
| 100-250 | | | | | | |
| 100-315 | | | | | | |
| 100-400 | | | | | | |
| 125-250 | 125 | 19 | 184 | 210 | 250 | 8xØ19 |
| 125-315 | | | | | | |
| 125-400 | | | | | | |
| 150-250 | 150 | 19 | 211 | 240 | 285 | 8xØ23 |
| 150-315 | | | | | | |
| 150-400 | | | | | | |
| 150-500 | | | | | | |
| 150-650 | | | | | | |
| 200-250 | 200 | 20 | 266 | 295 | 340 | 12xØ23 |
| 200-315 | | | | | | |
| 200-400 | | | | | | |
| 200-500 | | | | | | |
| 250-315 | 250 | 26 | 320 | 355 | 405 | 12xØ27 |
| 250-400 | | | | | | |
| 250-500 | | | | | | |
| 250-650 | | | | | | |
| 300-400 | | | | | | |
| 300-500 | 300 | 32 | 378 | 410 | 460 | 12xØ27 |
| 300-650 | | | | | | |
| 350-400 | | | | | | |
| 350-400 | 350 | 36 | 438 | 470 | 520 | 16xØ27 |
| 350-500 | | | | | | |
| 350-650 | | | | | | |
| 350-650 | 350 | 36 | 438 | 470 | 520 | 16xØ27 |

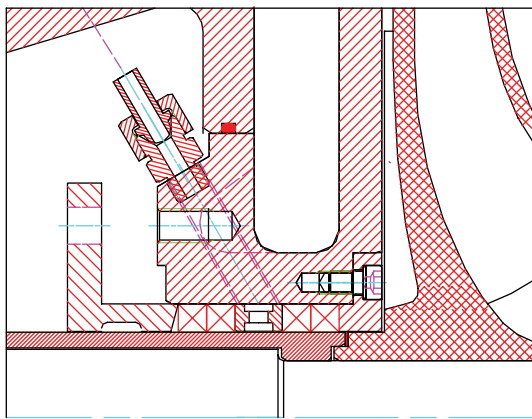
TECHNICAL DATA - SHAFT SEALING

■ Shaft Sealing

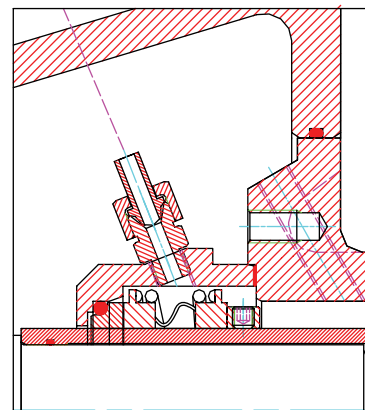
The shaft sealing could be arranged by soft packing or mechanical seal. Conversion from the gland packing to the mechanical seal is possible without any rework on the casing cover by using the relevant replacement parts.

In soft packing arrangements the shaft is protected by replaceable, stainless sleeve while the stuffing box is furnished with lantern ring for introduction of cooling liquid into the packing.

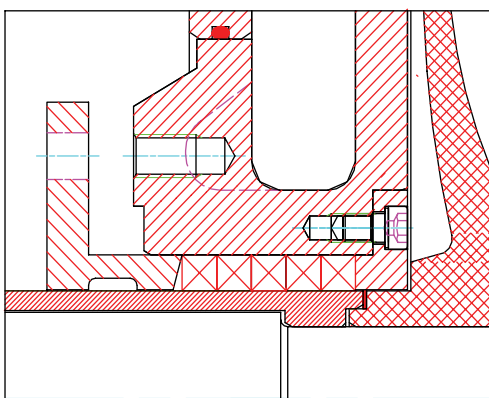
On special demand the pumps could be furnished with mechanical seal in accordance with the characteristics of the liquid and the operating conditions. Single mech. seal are according EN 12756 (DIN 24960)



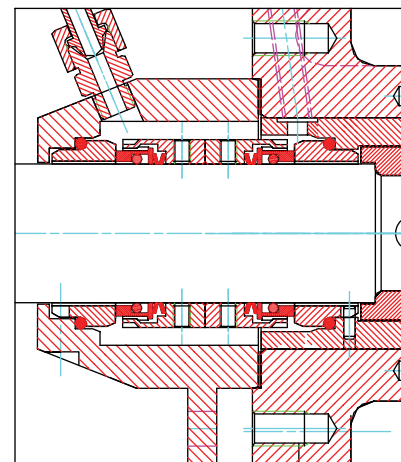
- Cooled stuffing box with internal barrier fluid for pumping of clean liquids in suction operation



- Single acting mechanical seal with cooling of seal surface, unbalanced Heavy Duty Rubber Bellows, Single Acting Seal with Standard Seat.

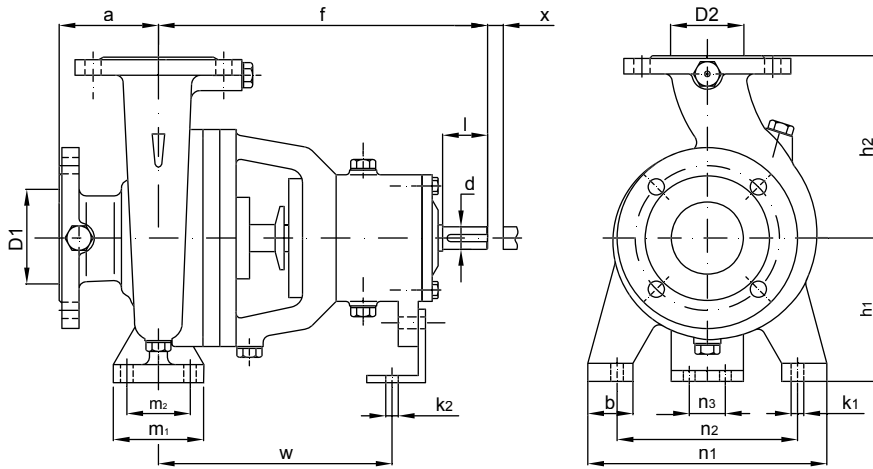


- Uncooled stuffing box without internal barrier fluid for pumping of clean liquids in suction operation

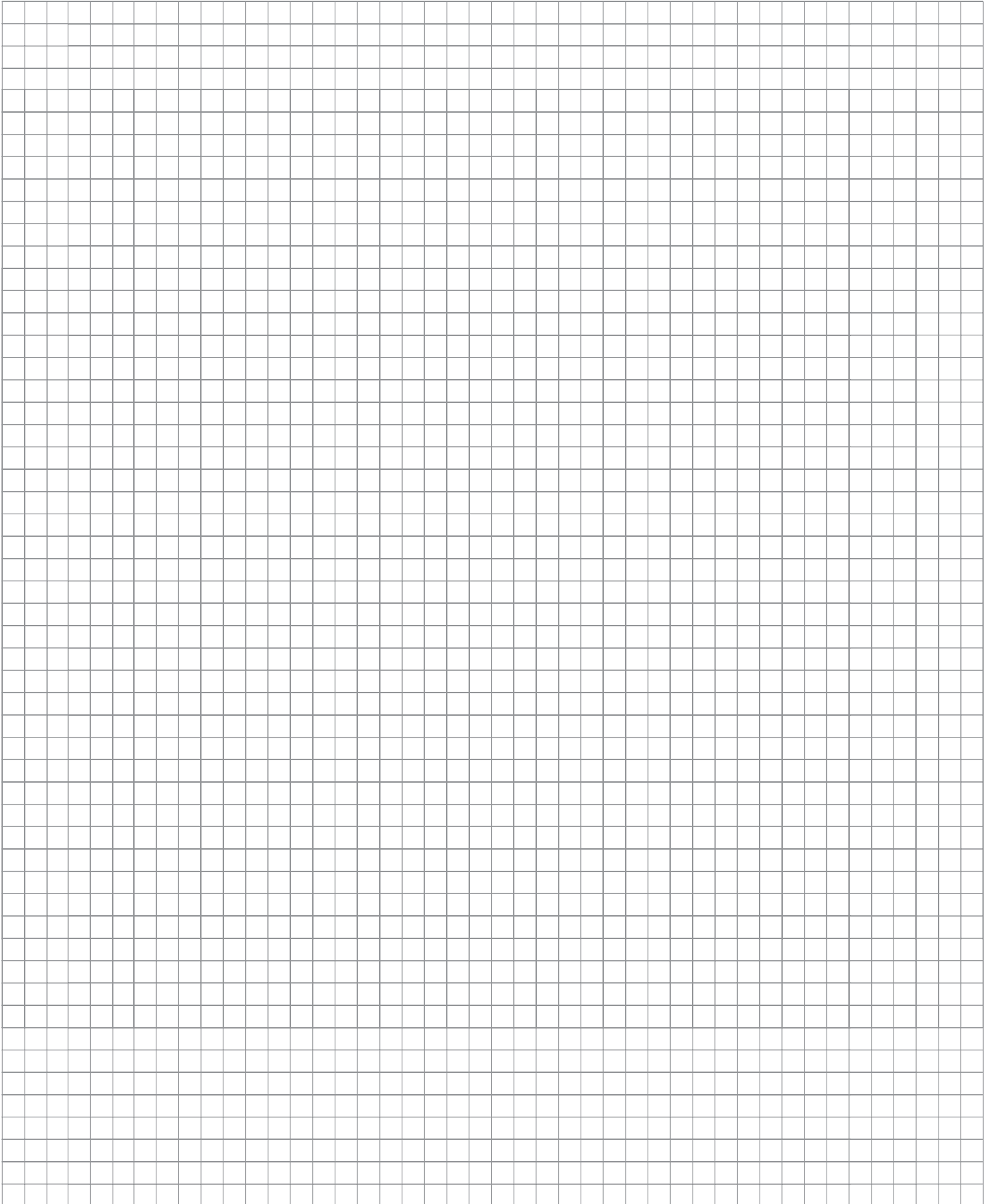


- Double –acting mechanical seal (back to back) both sides unbalanced

TECHNICAL DATA - INSTALLATION DIMENSIONS



| SIZE | Dimensions (mm) | | | | | | | | | | | | | | | | | |
|---------|-----------------|-----|-----|------|-----|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|-----|-----|
| | D1 | D2 | a | f | h1 | h2 | b | m1 | m2 | n1 | n2 | n3 | w | x | d | l | k1 | k2 |
| 32-125 | 50 | 32 | 80 | 385 | 112 | 140 | 50 | 100 | 70 | 190 | 140 | 110 | 285 | 100 | 24 | 50 | M12 | M12 |
| 32-160 | 50 | 32 | 80 | 385 | 132 | 160 | 50 | 100 | 70 | 240 | 190 | 140 | 285 | 100 | 24 | 50 | M12 | M12 |
| 32-200 | 50 | 32 | 80 | 385 | 160 | 180 | 50 | 100 | 70 | 240 | 190 | 140 | 285 | 100 | 24 | 50 | M12 | M12 |
| 32-250 | 50 | 32 | 100 | 500 | 180 | 225 | 65 | 125 | 95 | 320 | 250 | 190 | 370 | 100 | 32 | 80 | M12 | M12 |
| 40-160 | 65 | 40 | 80 | 385 | 132 | 160 | 50 | 100 | 70 | 240 | 190 | 140 | 285 | 100 | 24 | 50 | M12 | M12 |
| 40-200 | 65 | 40 | 100 | 385 | 160 | 180 | 50 | 100 | 70 | 265 | 212 | 165 | 285 | 100 | 24 | 50 | M12 | M12 |
| 40-250 | 65 | 40 | 100 | 500 | 180 | 225 | 65 | 125 | 95 | 320 | 250 | 190 | 370 | 100 | 32 | 80 | M12 | M12 |
| 40-315 | 65 | 40 | 125 | 500 | 200 | 250 | 65 | 125 | 95 | 345 | 280 | 215 | 370 | 100 | 32 | 80 | M12 | M12 |
| 50-160 | 80 | 50 | 100 | 385 | 160 | 180 | 50 | 100 | 70 | 265 | 212 | 165 | 285 | 100 | 24 | 50 | M12 | M12 |
| 50-200 | 80 | 50 | 100 | 385 | 160 | 200 | 50 | 100 | 70 | 265 | 212 | 165 | 285 | 100 | 24 | 50 | M12 | M12 |
| 50-250 | 80 | 50 | 125 | 500 | 180 | 225 | 65 | 125 | 95 | 320 | 250 | 190 | 370 | 100 | 32 | 80 | M12 | M12 |
| 50-315 | 80 | 50 | 125 | 500 | 225 | 280 | 65 | 125 | 95 | 345 | 280 | 215 | 370 | 100 | 32 | 80 | M12 | M12 |
| 65-125 | 80 | 65 | 100 | 385 | 132 | 160 | 50 | 100 | 70 | 240 | 190 | 110 | 285 | 100 | 24 | 50 | M12 | M12 |
| 65-160 | 100 | 65 | 100 | 500 | 160 | 200 | 65 | 125 | 95 | 280 | 212 | 150 | 370 | 100 | 32 | 80 | M12 | M12 |
| 65-200 | 100 | 65 | 100 | 500 | 180 | 225 | 65 | 125 | 95 | 320 | 250 | 190 | 370 | 140 | 32 | 80 | M12 | M12 |
| 65-250 | 100 | 65 | 125 | 500 | 200 | 250 | 80 | 160 | 120 | 360 | 280 | 200 | 370 | 140 | 32 | 80 | M16 | M12 |
| 65-315 | 100 | 65 | 125 | 530 | 225 | 280 | 80 | 160 | 120 | 400 | 315 | 240 | 370 | 140 | 42 | 110 | M16 | M12 |
| 80-125 | 100 | 80 | 100 | 385 | 160 | 180 | 65 | 125 | 95 | 280 | 212 | 110 | 285 | 140 | 24 | 50 | M12 | M12 |
| 80-160 | 125 | 80 | 125 | 500 | 180 | 225 | 65 | 125 | 95 | 320 | 250 | 190 | 370 | 140 | 32 | 80 | M12 | M12 |
| 80-200 | 125 | 80 | 125 | 500 | 180 | 250 | 65 | 125 | 95 | 345 | 280 | 215 | 370 | 140 | 32 | 80 | M16 | M12 |
| 80-250 | 125 | 80 | 125 | 500 | 225 | 280 | 80 | 160 | 120 | 400 | 315 | 240 | 370 | 140 | 32 | 80 | M16 | M12 |
| 80-315 | 125 | 80 | 125 | 530 | 250 | 315 | 80 | 160 | 120 | 400 | 315 | 240 | 370 | 140 | 42 | 110 | M16 | M12 |
| 80-400 | 125 | 80 | 125 | 530 | 280 | 355 | 80 | 160 | 120 | 435 | 355 | 275 | 370 | 140 | 42 | 110 | M16 | M12 |
| 100-200 | 125 | 100 | 125 | 500 | 200 | 280 | 80 | 160 | 120 | 360 | 280 | 200 | 370 | 140 | 32 | 80 | M16 | M12 |
| 100-250 | 125 | 100 | 140 | 530 | 225 | 280 | 80 | 160 | 120 | 400 | 315 | 240 | 370 | 140 | 42 | 110 | M16 | M12 |
| 100-315 | 125 | 100 | 140 | 530 | 250 | 315 | 80 | 160 | 120 | 400 | 315 | 240 | 370 | 140 | 42 | 110 | M16 | M12 |
| 100-400 | 125 | 100 | 140 | 530 | 280 | 355 | 100 | 200 | 150 | 500 | 400 | 300 | 370 | 140 | 42 | 110 | M20 | M12 |
| 125-250 | 150 | 125 | 140 | 530 | 250 | 355 | 80 | 160 | 120 | 400 | 315 | 240 | 370 | 140 | 42 | 110 | M16 | M12 |
| 125-315 | 150 | 125 | 140 | 530 | 280 | 355 | 100 | 200 | 150 | 500 | 400 | 300 | 370 | 140 | 42 | 110 | M20 | M12 |
| 125-400 | 150 | 125 | 140 | 530 | 315 | 400 | 100 | 200 | 150 | 500 | 400 | 300 | 370 | 140 | 42 | 110 | M20 | M12 |
| 150-250 | 200 | 150 | 160 | 530 | 280 | 375 | 100 | 200 | 150 | 500 | 400 | 300 | 370 | 180 | 42 | 110 | M20 | M12 |
| 150-315 | 200 | 150 | 160 | 670 | 315 | 400 | 100 | 200 | 150 | 550 | 450 | 350 | 500 | 180 | 48 | 110 | M20 | M16 |
| 150-400 | 200 | 150 | 160 | 670 | 315 | 450 | 100 | 200 | 150 | 550 | 450 | 350 | 500 | 180 | 48 | 110 | M20 | M16 |
| 150-500 | 200 | 150 | 180 | 670 | 375 | 500 | 100 | 200 | 150 | 550 | 450 | 350 | 500 | 180 | 48 | 110 | M20 | M16 |
| 200-250 | 200 | 200 | 180 | 670 | 355 | 425 | 100 | 200 | 150 | 550 | 450 | 350 | 500 | 180 | 48 | 110 | M20 | M16 |
| 200-315 | 250 | 200 | 200 | 670 | 355 | 450 | 110 | 200 | 150 | 550 | 450 | 350 | 500 | 180 | 48 | 110 | M20 | M16 |
| 200-400 | 250 | 200 | 180 | 670 | 355 | 500 | 100 | 200 | 150 | 550 | 450 | 350 | 500 | 180 | 48 | 110 | M20 | M16 |
| 200-500 | 250 | 200 | 200 | 670 | 425 | 560 | 100 | 200 | 150 | 660 | 560 | 460 | 565 | 180 | 60 | 140 | M20 | M16 |
| 250-315 | 300 | 250 | 250 | 670 | 400 | 560 | 130 | 260 | 190 | 690 | 560 | 430 | 500 | 180 | 48 | 110 | M24 | M16 |
| 250-400 | 300 | 250 | 200 | 720 | 425 | 600 | 130 | 260 | 190 | 800 | 670 | 540 | 515 | 180 | 60 | 140 | M24 | M16 |
| 250-500 | 300 | 250 | 200 | 720 | 475 | 670 | 130 | 260 | 190 | 800 | 670 | 540 | 515 | 180 | 60 | 140 | M24 | M16 |
| 250-650 | 300 | 250 | 300 | 1090 | 500 | 750 | 225 | 400 | 300 | 1080 | 1000 | 630 | 730 | 250 | 95 | 170 | M24 | M16 |
| 300-400 | 350 | 300 | 300 | 900 | 500 | 630 | 180 | 360 | 250 | 900 | 750 | 540 | 680 | 250 | 75 | 150 | M24 | M16 |
| 300-500 | 350 | 300 | 300 | 900 | 560 | 750 | 225 | 400 | 300 | 1080 | 1000 | 630 | 680 | 250 | 75 | 150 | M24 | M16 |
| 300-650 | 350 | 300 | 300 | 1090 | 600 | 800 | 225 | 400 | 300 | 1250 | 1170 | 800 | 730 | 250 | 95 | 170 | M24 | M16 |
| 350-400 | 350 | 350 | 350 | 930 | 600 | 750 | 225 | 400 | 300 | 1250 | 1170 | 800 | 710 | 315 | 75 | 150 | M24 | M16 |
| 350-500 | 350 | 350 | 300 | 900 | 670 | 850 | 225 | 400 | 300 | 1250 | 1170 | 800 | 630 | 250 | 75 | 150 | M24 | M16 |
| 350-650 | 400 | 350 | 300 | 1150 | 630 | 850 | 225 | 400 | 300 | 1250 | 1170 | 800 | 740 | 250 | 110 | 210 | M24 | M16 |





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