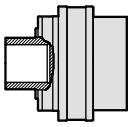
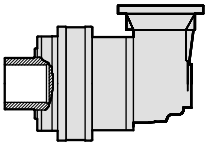
# Size 220 - 1100000 Nm

## ST-220 Technical data



| Stages | Ratio | $T_{2N(1.2M)}$ (1) | $T_{2N(6M)}$ (1) | $T_{2Peak}$ (2) | $n_{1N}$ (3) | $n_{1Max}$ (4) | $P_t$ (5) | η |
|---|---|---|---|---|---|---|---|---|
| | i | (Nm) | (Nm) | (Nm) | (rpm) | (rpm) | (kW) | (%) |
| 1 | 4.32 | 1172864 | 967096 | 1524723 | 50 | 100 | 278 | 98 |
| 2 | 17.3 | 1172864 | 967096 | 1524723 | 100 | 200 | 187 | 96 |
| | 19.7 | 1172864 | 967096 | 1524723 | 100 | 200 | 187 | 96 |
| 3 | 70.7 | 1172864 | 967096 | 1524723 | 800 | 1200 | 140 | 94 |
| | 80.8 | 1172864 | 967096 | 1524723 | 800 | 1200 | 140 | 94 |
| | 90.7 | 1172864 | 967096 | 1524723 | 800 | 1200 | 140 | 94 |
| | 103.7 | 1172864 | 967096 | 1524723 | 800 | 1200 | 140 | 94 |
| 4 | 282.7 | 1172864 | 967096 | 1524723 | 1200 | 2000 | 111 | 92 |
| | 362.9 | 1172864 | 967096 | 1524723 | 1200 | 2000 | 111 | 92 |
| | 414.6 | 1172864 | 967096 | 1524723 | 1200 | 2000 | 111 | 92 |
| | 471.7 | 1172864 | 967096 | 1524723 | 1200 | 2000 | 111 | 92 |
| | 539.0 | 1172864 | 967096 | 1524723 | 1200 | 2000 | 111 | 92 |
| 5 | 1005.2 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 1290.2 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 1306.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 1492.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 1554.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 1677.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 1808.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 1916.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 2058.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 2309.5 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 2480.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 2641.8 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 2834.2 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 3185.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 3593.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 4088.4 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| | 4671.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 91 | 90 |
| 6 | 4737.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 5193.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 5639.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 5980.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 6336.5 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 6796.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 7239.4 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 7676.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 8033.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 8993.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 9253.4 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 10572.0 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 11995.5 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 13743.6 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 15445.2 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 17646.2 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 20289.0 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 23091.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 28026.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |
| | 33865.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 88 |

# SX-220 Technical data



| Stages | Ratio | $T_{2N(1.2M)}$ (1) | $T_{2N(6M)}$ (1) | $T_{2Peak}$ (2) | $n_{1N}$ (3) | $n_{1Max}$ (4) | $P_t$ (5) | η |
|---|---|---|---|---|---|---|---|---|
| | i | (Nm) | (Nm) | (Nm) | (rpm) | (rpm) | (kW) | (%) |
| 5 | 1000.8 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| | 1143.4 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| | 1301.0 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| | 1486.4 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| | 1670.0 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| | 1942.0 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| | 2181.8 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| | 2492.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 57 | 90 |
| 6 | 2794.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 3367.6 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 3847.5 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 4150.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 4938.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 5190.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 5721.4 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 6454.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 6783.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 7344.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 7879.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 8390.7 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 8818.8 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 9896.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 10116.3 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 11365.9 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 12144.5 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 13648.1 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |
| | 15589.0 | 1172864 | 967096 | 1524723 | 1500 | 2800 | 50 | 88 |

(1) $T_{2N}$ values are calculated at $n_1=n_{1n}$, continuous duty cycle, uniform operation and KA=1 according to ISO 6336. $T_{2N(1.2M)}$ has been calculated for 1200000 of revolutions at the output shaft, and $T_{2N(6M)}$ has been calculated for 6000000 of revolutions at the output shaft. The application factor $f_s$ must be considered for each duty cycle and machine type.

(2) $T_{2Peak}$ is the maximum output torque the gearbox can tolerate during startups, inversions or other peaks. This value should never be used for continuous operation or for intermittent operation with frequent accelerations.

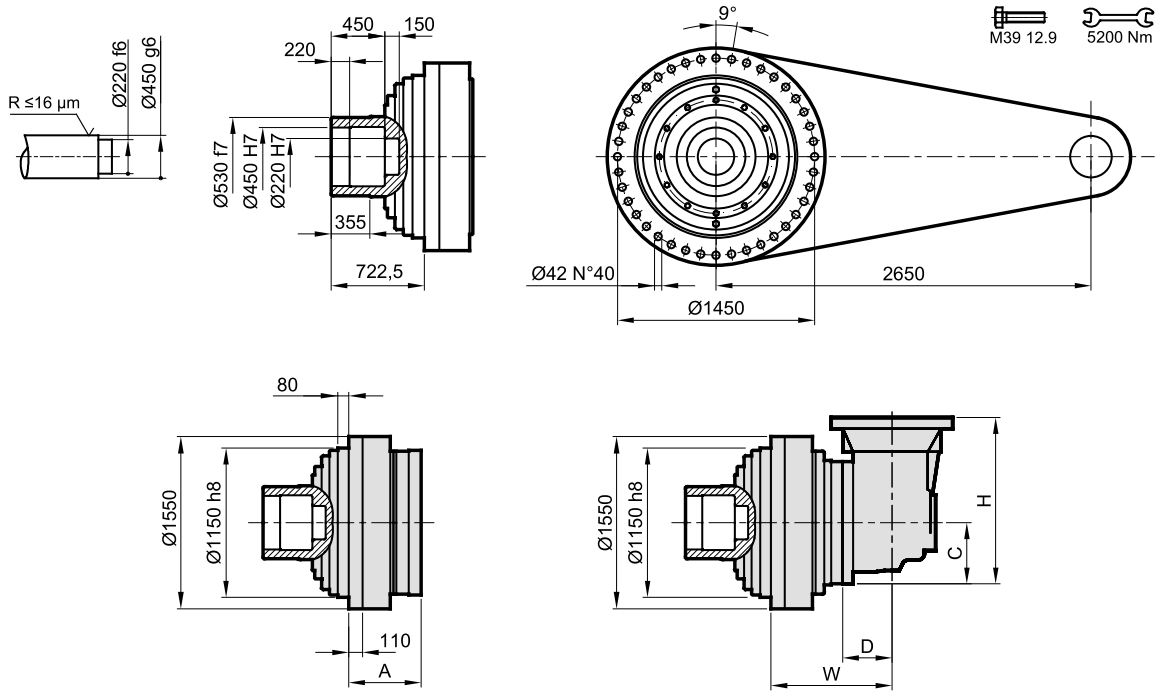
(3) $n_{1n}$ is the rated input speed for continuous operation

(4) $n_{1max}$ is the maximum input speed for intermittent service. For continuous operation at speeds over n1n please inquire.

(5) Pt is the thermal power rating, that is the power in kW that, at 20°C, the gearbox can transmit during continuous operation, at $n_1=n_{1n}$ and lubricated with ISO-VG-220 oil without it exceeding 90°C. It depends on ambient temperature.

# Dimensions

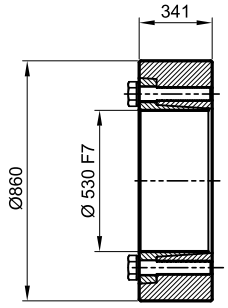
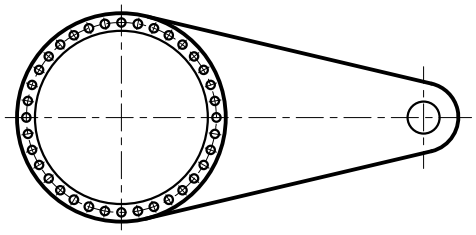
## S□-E-220-□□-H450×600




| Stages | A | W | D | C | H | ST Mass (1) | SX Mass (1) |
|---|---|---|---|---|---|---|---|
| **1** | * | - | - | - | - | 4232 | - |
| **2** | 646.5 | - | - | - | - | 5072 | - |
| **3** | 1025.5 | - | - | - | - | 5268 | - |
| **4** | 1263.5 | - | - | - | - | 5327 | - |
| **5** | 1374.5 | * | * | * | * | 5343 | * |
| **6** | 1694.5 | 1892.5 | 101 | 235 | 550 | 5359 | 5740 |

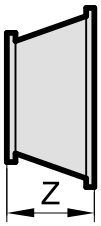
(1) Mass in kg for gearboxes without input modules (solid input shaft, motor flange, etc) or accessories. To obtain actual mass, add the mass for your chosen input module, please inquire.

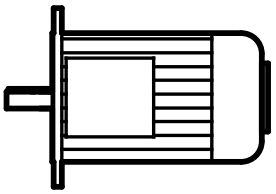
* Available upon request

| Accessories | |
|---|---|
| **SA-H-530** | **SA-T-□-1150-1450-40×42-□-□** |
|   Max. Torque: 2650 kNm<br>Screw Tightening Torque: 2210 Nm |  See the chapter on Torque Arms |

# Inputs

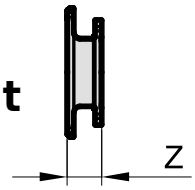
## IEC Motor Input

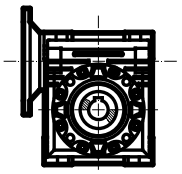


| IEC | 100 | 112 | 132 | 160 | 180 | 200 | 225 | 250 | 280 | 315 |
|---|---|---|---|---|---|---|---|---|---|---|
| Stages | Z | Z | Z | Z | Z | Z | Z | Z | Z | Z |
| 1 | - | - | - | - | - | 148.5 | 148.5 | 183.5 | 183.5 | 233 |
| 2 | - | - | - | - | - | 148.5 | 148.5 | 183.5 | 183.5 | 233 |
| 3 | - | - | - | - | - | 148.5 | 148.5 | 183.5 | 183.5 | 233 |
| 4 | - | - | - | - | - | 148.5 | 148.5 | 183.5 | 183.5 | - |
| 5 | - | - | - | 120.5 | 120.5 | 148.5 | 148.5 | - | - | - |
| 6 | 71 | 71 | 104 | 120.5 | 120.5 | 148.5 | - | - | - | - |

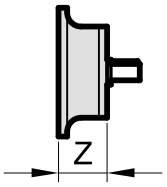
## Worm Gearbox Input



| Stages | SVS-050<br>SQS-050 | SVS-063<br>SQS-063 | SVS-075<br>SQS-075 | SVS-090<br>SQS-090 | SVS-110<br>SQS-110 |
|---|---|---|---|---|---|
| | Z | Z | Z | Z | Z |
| 1 | - | - | - | - | - |
| 2 | - | - | - | - | - |
| 3 | - | - | - | - | - |
| 4 | - | - | - | - | - |
| 5 | - | - | - | - | 95 |
| 6 | 80 | 80 | 57 | 57 | 57 |

# Solid Shaft Input




| Stages | E25×50<br>E28×50 | E35×50<br>E42×82 | E48×82.5<br>E65×105 | E70×120<br>E80×130 | E90×140<br>E100×140 |
|---|---|---|---|---|---|
| | Z | | Z | Z | Z |
| 1 | - | | - | - | - |
| 2 | - | | - | - | - |
| 3 | - | | - | - | - |
| 4 | - | | - | - | 211 |
| 5 | - | | - | - | 211 |
| 6 | - | | - | 185 | 211 |