

| ACTUATOR | No. of Springs | Actuation by springs |            | TORQUE FROM AIR STROKE (Nm) |     |      |     |        |     |      |     |            |            |            |            |            |            |             |            |
|----------|----------------|----------------------|------------|-----------------------------|-----|------|-----|--------|-----|------|-----|------------|------------|------------|------------|------------|------------|-------------|------------|
|          |                |                      |            | 3.5 Bar                     |     | 4Bar |     | 4.5Bar |     | 5Bar |     | 5.5Bar     |            | 6Bar       |            | 7Bar       |            | 8Bar        |            |
|          |                | End                  | Start      | 0°                          | 90° | 0°   | 90° | 0°     | 90° | 0°   | 90° | 0°         | 90°        | 0°         | 90°        | 0°         | 90°        | 0°          | 90°        |
| HP 160S  | S07            | 157                  | 233        | 240                         | 164 | 297  | 221 | 354    | 278 | 410  | 334 | 467        | 391        | 524        | 448        | 637        | 561        |             |            |
|          | S08            | 180                  | 266        | 217                         | 131 | 274  | 188 | 331    | 245 | 387  | 301 | 444        | 358        | 501        | 415        | 614        | 528        |             |            |
|          | S09            | 202                  | 299        | 195                         | 98  | 252  | 155 | 309    | 212 | 365  | 268 | 422        | 325        | 479        | 382        | 592        | 495        | 706         | 609        |
|          | S10            | 224                  | 332        |                             |     | 230  | 122 | 287    | 179 | 343  | 235 | 400        | 292        | 457        | 349        | 570        | 462        | 684         | 576        |
|          | S11            | 247                  | 365        |                             |     |      |     | 264    | 146 | 320  | 202 | 377        | 259        | 434        | 316        | 547        | 429        | 661         | 543        |
|          | S12            | <b>269</b>           | <b>399</b> |                             |     |      |     |        |     |      |     | <b>355</b> | <b>225</b> | <b>412</b> | <b>282</b> | <b>525</b> | <b>395</b> | <b>639</b>  | <b>509</b> |
| HP 180S  | S07            | 221                  | 332        | 315                         | 204 | 392  | 281 | 468    | 357 | 545  | 434 | 621        | 510        | 698        | 587        | 851        | 740        |             |            |
|          | S08            | 253                  | 379        | 283                         | 157 | 360  | 234 | 436    | 310 | 513  | 387 | 589        | 463        | 666        | 540        | 819        | 693        |             |            |
|          | S09            | 285                  | 426        | 251                         | 110 | 328  | 187 | 404    | 263 | 481  | 340 | 557        | 416        | 634        | 493        | 787        | 646        | 940         | 799        |
|          | S10            | 316                  | 474        |                             |     | 297  | 139 | 373    | 215 | 450  | 292 | 526        | 368        | 603        | 445        | 756        | 598        | 909         | 751        |
|          | S11            | 348                  | 521        |                             |     |      |     | 341    | 168 | 418  | 245 | 494        | 321        | 571        | 398        | 724        | 551        | 877         | 704        |
|          | S12            | <b>379</b>           | <b>568</b> |                             |     |      |     |        |     |      |     | <b>463</b> | <b>274</b> | <b>540</b> | <b>351</b> | <b>693</b> | <b>504</b> | <b>846</b>  | <b>657</b> |
| HP 200S  | S07            | 298                  | 441        | 446                         | 303 | 553  | 410 | 659    | 516 | 765  | 622 | 872        | 729        | 978        | 835        | 1191       | 1048       |             |            |
|          | S08            | 340                  | 504        | 404                         | 240 | 511  | 347 | 617    | 453 | 723  | 559 | 830        | 666        | 936        | 772        | 1149       | 985        |             |            |
|          | S09            | 383                  | 567        | 361                         | 177 | 468  | 284 | 574    | 390 | 680  | 496 | 787        | 603        | 893        | 709        | 1106       | 922        | 1319        | 1135       |
|          | S10            | 425                  | 630        |                             |     | 426  | 221 | 532    | 327 | 638  | 433 | 745        | 540        | 851        | 646        | 1064       | 859        | 1277        | 1072       |
|          | S11            | 468                  | 693        |                             |     |      |     | 489    | 264 | 595  | 370 | 702        | 477        | 808        | 583        | 1021       | 796        | 1234        | 1009       |
|          | S12            | <b>510</b>           | <b>756</b> |                             |     |      |     |        |     |      |     | <b>660</b> | <b>414</b> | <b>766</b> | <b>520</b> | <b>979</b> | <b>733</b> | <b>1192</b> | <b>946</b> |

TORQUE FIGURES IN BOLD = STANDARD STOCK PRODUCT

| HP 211S | AIR TORQUE |     |     | SPRING TORQUE |     |     |
|---------|------------|-----|-----|---------------|-----|-----|
|         | Start      | Run | End | Start         | Run | End |
| 4.2 Bar | 1114       | 452 | 634 | 678           | 283 | 393 |
| 5.6 Bar | 1385       | 537 | 724 | 1026          | 446 | 624 |

| HP 212S | AIR TORQUE |      |      | SPRING TORQUE |     |      |
|---------|------------|------|------|---------------|-----|------|
|         | Start      | Run  | End  | Start         | Run | End  |
| 4.2 Bar | 2226       | 904  | 1266 | 1356          | 565 | 780  |
| 5.6 Bar | 2769       | 1074 | 1446 | 2045          | 883 | 1243 |