



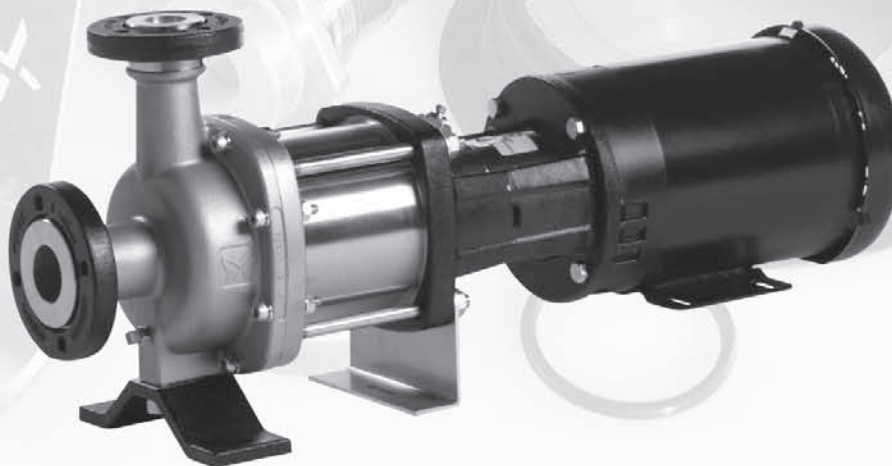
# CRN3-H

## Parts List & Kits

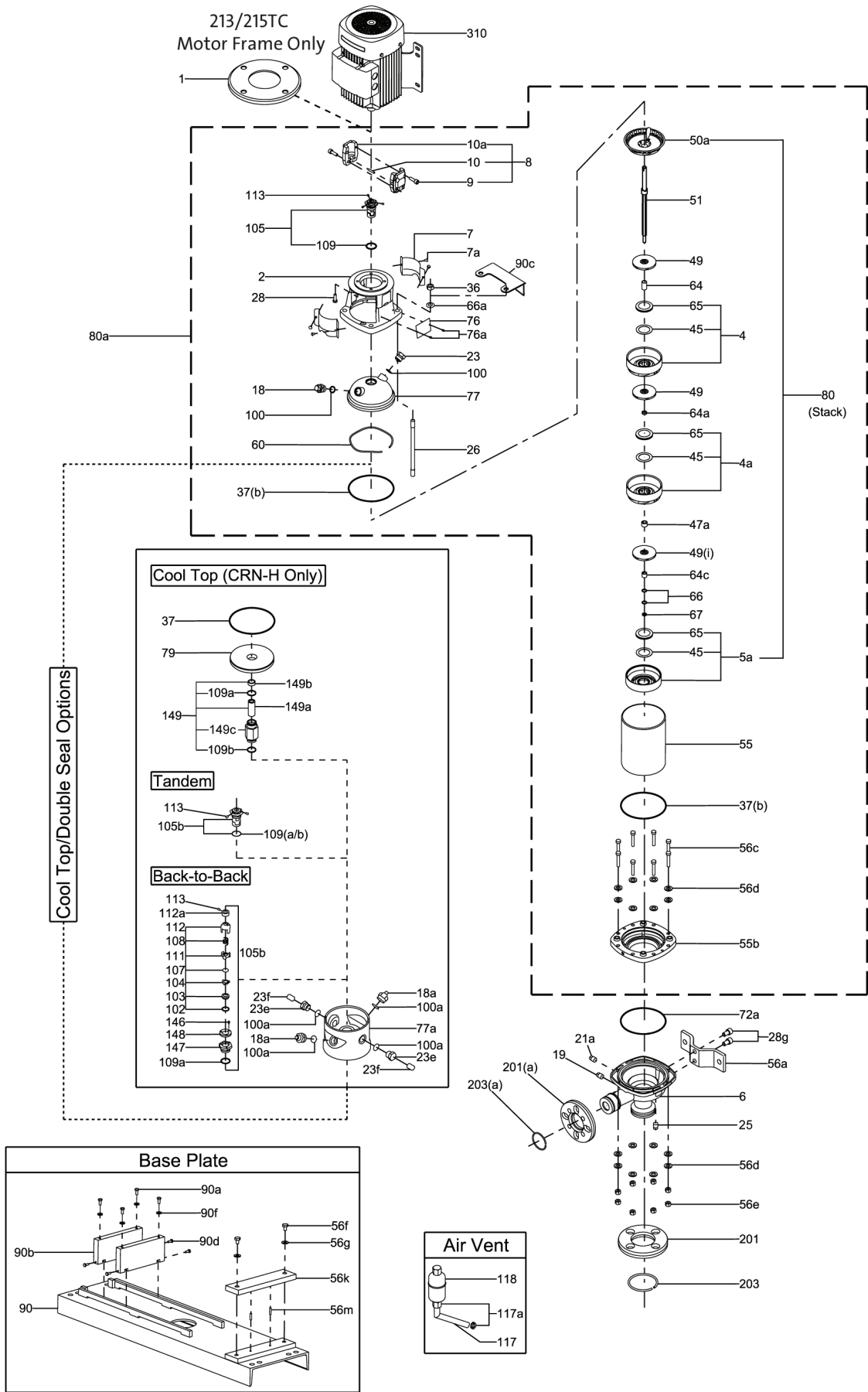
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Spare Part Kits  
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# Exploded View **CRN3-H**



# Parts List & Kits CRN3-H

| Pos. No.          | Part Description                                        | Model | Stages                                         | No. Used | Comments/Dimensions                          | B.O.M. Ref. No. | Material No. | Included in kits ? |
|-------------------|---------------------------------------------------------|-------|------------------------------------------------|----------|----------------------------------------------|-----------------|--------------|--------------------|
| <b>PARTS LIST</b> |                                                         |       |                                                |          |                                              |                 |              |                    |
| 1                 | Adapter for Motor Stool                                 |       |                                                | 1        | For NEMA, 213/215TC, 7.5 - 10HP              | 96476208        |              | No                 |
| 2                 | Motor Stool-Cat. Cast Iron, w/o insert Pos. 77          |       | 3/2-12<br>13-25                                | 1        | NEMA, 56C, 1/3 - 2HP                         | 96436510        |              | No                 |
|                   |                                                         |       |                                                | 1        | NEMA, 182/184TC, 3 - 5HP                     | 96436511        |              | No                 |
|                   |                                                         |       |                                                |          | Add Pos. 1, NEMA, 213TC, 7.5 - 10HP          | 96436511        |              | No                 |
|                   |                                                         |       |                                                | 1        | NEMA, 56C, 1/3 - 2HP                         | 96497267        |              | No                 |
|                   |                                                         |       |                                                | 1        | NEMA, 182/184TC, 3 - 5HP                     | 96497271        |              | No                 |
| 4                 | Chamber, Complete with Pos. 45 & 65                     |       | 3/2-36<br>3/2-36<br>3/2-36<br>3/2-36<br>3/2-36 | 1        | Add Pos. 1, NEMA, 213TC, 7.5 - 10HP          | 96497271        | 97690021     | No                 |
|                   |                                                         |       |                                                | ^^^      | PTFE Pos. 45                                 | 96439481        |              | No                 |
|                   |                                                         |       |                                                | ^^^      | PTFE Pos. 45, (97690021 is a qty. of 5)      | 96439482        |              | No                 |
|                   |                                                         |       |                                                | ^^^^     | Silicon Carbide Bearing, PTFE Pos. 45        | 96439476        |              | YES                |
|                   |                                                         |       |                                                | ^^^^     | Graflon Bearing, PTFE Pos. 45                | 96440615        |              | YES                |
| 5a                | Chamber, Bottom Complete with Pos. 45 & 65              |       |                                                | 1*       | PTFE Pos. 45                                 | 96439485        | 96588149     | No                 |
| 6                 | Volute                                                  |       |                                                | 1        | GA, Stainless Steel                          | 95922064        |              | No                 |
| 7                 | Coupling Guard                                          |       |                                                | 2        | NEMA-56C                                     | 96438137        |              | No                 |
| 7a                | Screw for Coupling Guard                                |       | 3/2-36                                         | 13-25    | NEMA, 182-215TC                              | 96438138        |              | No                 |
|                   |                                                         |       |                                                | 4        | Screw comb. slot torx/straight slot 4 x 8mm  | 96488481        |              | No                 |
|                   |                                                         |       |                                                |          |                                              |                 |              |                    |
| 9                 | Allen Screw                                             |       |                                                | 4        | M6 x 20mm, Delta Tone/Seal                   | 00ID7899        |              | YES                |
| 10                | Shaft Pin                                               |       | 3/2-36                                         | 13-25    | M8 x 25mm, Delta Tone/Seal                   | 00ID7900        |              | YES                |
|                   |                                                         |       |                                                | 4        | M10 x 25mm, Delta Tone/Seal                  | 00ID7901        |              | YES                |
|                   |                                                         |       |                                                | 1        | ø5 x 26mm                                    | 310192          |              | YES                |
|                   |                                                         |       |                                                | 2        | NEMA, 56C, 1/3 - 2HP, ø15.8 / ø12            | 410108          |              | YES                |
|                   |                                                         |       |                                                | 1        | NEMA, 143/5TC, 1/3-3HP, ø22.225 / ø12 (Mach) | 97851501        |              | YES                |
| 10a               | Coupling Half                                           |       | 3/2-12<br>13-25                                | 2        | NEMA, 182/184TC, 3-5HP, ø28.5/ø12            | 410109          |              | YES                |
|                   |                                                         |       |                                                | 2        | NEMA, 213TC, 7.5-10HP, ø34.9/ø12             | 96472175        |              | YES                |
|                   |                                                         |       |                                                | *        | G 1/2A, NV24 with NV9 x M8 stem              | 405150          |              | No                 |
|                   |                                                         |       |                                                | **       | 1/4" NPT,SS SQHD, with Loctite               | 91136507        |              | No                 |
|                   |                                                         |       |                                                | **       | 1/4" NPT,SS SQHD, with Loctite               | 91136507        |              | No                 |
| 21a               | Pipe Plug                                               |       |                                                | **       | G 1/2A, Solid No port, NV24                  | 370025          | 95061733     | No                 |
| 23(c)             | Plug                                                    |       |                                                | **       | G 1/2A, w/1/4"port, NV24                     | 91120659        |              | No                 |
| 23a, e            | Plug (option)                                           |       |                                                | **       | 1/4" NPT,SS SQHD, with Loctite               | 91136507        |              | No                 |
| 23b, f            | Pipe Plug for Pos. 23a , 23e                            |       |                                                | **       | G 1/2A, NV24, Vented                         | 96510323        |              | No                 |
| 23d               | Plug, Vented for Pos. 77a Cool Top® option only         |       |                                                | 2        | 1/4" NPT,SS SQHD, with Loctite               | 91136507        |              | No                 |
| 25                | Drain Plug                                              |       |                                                | 1        |                                              |                 |              | No                 |
| 26                | Staybolt                                                |       |                                                | 3/2-3    | M12, ø10,7 x 69mm                            | 97683238        |              | No                 |
|                   |                                                         |       |                                                | 4        | M12, ø10,7 x 87mm                            | 97683239        |              | No                 |
|                   |                                                         |       |                                                | 5        | M12, ø10,7 x 106mm                           | 97683241        |              | No                 |
|                   |                                                         |       |                                                | 6        | M12, ø10,7 x 123mm                           | 97683242        |              | No                 |
|                   |                                                         |       |                                                | 7        | M12, ø10,7 x 141mm                           | 97683243        |              | No                 |
|                   |                                                         |       |                                                | 8        | M12, ø10,7 x 160mm                           | 97683245        |              | No                 |
|                   |                                                         |       |                                                | 9        | M12, ø10,7 x 177mm                           | 97683246        |              | No                 |
|                   |                                                         |       |                                                | 10       | M12, ø10,7 x 195mm                           | 97683247        |              | No                 |
|                   |                                                         |       |                                                | 11       | M12, ø10,7 x 214mm                           | 97683250        |              | No                 |
|                   |                                                         |       |                                                | 12       | M12, ø10,7 x 231mm                           | 97683251        |              | No                 |
|                   |                                                         |       |                                                | 13       | M12, ø10,7 x 249mm                           | 97683252        |              | No                 |
|                   |                                                         |       |                                                | 15       | M12, ø10,7 x 285mm                           | 97683255        |              | No                 |
|                   |                                                         |       |                                                | 17       | M12, ø10,7 x 322mm                           | 97683258        |              | No                 |
|                   |                                                         |       |                                                | 19       | M12, ø10,7 x 357mm                           | 97683260        |              | No                 |
|                   |                                                         |       |                                                | 21       | M12, ø10,7 x 393mm                           | 97683262        |              | No                 |
|                   |                                                         |       |                                                | 23       | M12, ø10,7 x 430mm                           | 97683264        |              | No                 |
|                   |                                                         |       |                                                | 25       | M12, ø10,7 x 465mm                           | 97683266        |              | No                 |
|                   |                                                         |       |                                                | 27       | M12, ø10,7 x 501mm, 4 pole & 50 Hz.          | 97683268        |              | No                 |
|                   |                                                         |       |                                                | 29       | M12, ø10,7 x 537mm, 4 pole & 50 Hz.          | 97683270        |              | No                 |
|                   |                                                         |       |                                                | 31       | M12, ø10,7 x 573mm, 4 pole & 50 Hz.          | 97683272        |              | No                 |
|                   |                                                         |       |                                                | 33       | M12, ø10,7 x 609mm, 4 pole & 50 Hz.          | 97683273        |              | No                 |
|                   |                                                         |       |                                                | 36       | M12, ø10,7 x 663mm, 4 pole & 50 Hz.          | 97683274        |              | No                 |
|                   | Staybolt (Cool Top®, Back-to-Back & Tandem Seal Option) |       | 3/2-3                                          | 4        | M12, ø10,7 x 177mm                           | 97683246        |              | No                 |
|                   |                                                         |       |                                                | 4        | M12, ø10,7 x 195mm                           | 97683247        |              | No                 |
|                   |                                                         |       |                                                | 5        | M12, ø10,7 x 214mm                           | 97683250        |              | No                 |
|                   |                                                         |       |                                                | 6        | M12, ø10,7 x 231mm                           | 97683251        |              | No                 |
|                   |                                                         |       |                                                | 7        | M12, ø10,7 x 249mm                           | 97683252        |              | No                 |
|                   |                                                         |       |                                                | 8        | M12, ø10,7 x 267mm                           | 97683254        |              | No                 |
|                   |                                                         |       |                                                | 9        | M12, ø10,7 x 285mm                           | 97683255        |              | No                 |
|                   |                                                         |       |                                                | 10       | M12, ø10,7 x 303mm                           | 97683256        |              | No                 |
|                   |                                                         |       |                                                | 11       | M12, ø10,7 x 322mm                           | 97683258        |              | No                 |
|                   |                                                         |       |                                                | 12       | M12, ø10,7 x 339mm                           | 97683259        |              | No                 |
|                   |                                                         |       |                                                | 13       | M12, ø10,7 x 357mm                           | 97683260        |              | No                 |
|                   |                                                         |       |                                                | 15       | M12, ø10,7 x 393mm                           | 97683262        |              | No                 |
|                   |                                                         |       |                                                | 17       | M12, ø10,7 x 430mm                           | 97683264        |              | No                 |
|                   |                                                         |       |                                                | 19       | M12, ø10,7 x 465mm                           | 97683266        |              | No                 |
|                   |                                                         |       |                                                | 21       | M12, ø10,7 x 501mm                           | 97683268        |              | No                 |
|                   |                                                         |       |                                                | 23       | M12, ø10,7 x 537mm                           | 97683270        |              | No                 |

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# Parts List & Kits CRN3-H

| Pos. No.          | Part Description                                         | Model | Stages | No. Used | Comments/Dimensions                       | B.O.M. Ref. No. | Material No. | Included in kits ? |
|-------------------|----------------------------------------------------------|-------|--------|----------|-------------------------------------------|-----------------|--------------|--------------------|
| <b>PARTS LIST</b> |                                                          |       |        |          |                                           |                 |              |                    |
| 28                | Motor Bolt                                               |       | 25     | 4        | M12, ø10,7 x 573mm                        | 97683272        |              | No                 |
|                   |                                                          |       | 27     | 4        | M12, ø10,7 x 609mm, 4 pole & 50 Hz.       | 97683273        |              | No                 |
|                   |                                                          |       | 29     | 4        | M12, ø10,7 x 645mm, 4 pole & 50 Hz.       | 98284269        |              | No                 |
|                   |                                                          |       | 31     | 4        | M12, ø10,7 x 681mm, 4 pole & 50 Hz.       | 98284270        |              | No                 |
|                   |                                                          |       | 33     | 4        | M12, ø10,7 x 717mm, 4 pole & 50 Hz.       | 97683275        |              | No                 |
|                   |                                                          |       | 36     | 4        | M12, ø10,7 x 771mm, 4 pole & 50 Hz.       | 97683276        |              | No                 |
|                   |                                                          |       | 3/2-12 | 4        | NEMA, 56C, 1/3 - 2HP. UNC 3/8" x 25mm     | 00ID1839        |              | No                 |
| 28g               | Bolt for foot Pos. 56a                                   |       | 13-25  | 4        | NEMA, 182/184TC, 3 - 5HPUNC1/2" x 25mm    | 00ID1840        |              | No                 |
|                   |                                                          |       |        |          | NEMA, 213TC, 7.5 -10HP. UNC 1/2" x 1.25"  | 91128631        |              | No                 |
| 36                | Staybolt Nut                                             |       | 3/2-36 | 4        | M12 x 1.75 x 20mm, 316SS, Delta Tone/Seal | 97672732        |              | No                 |
| 37                | Sleeve O-ring                                            |       | 3/2-36 | ◆◆       | EPDM, ø137.5 x 3.3mm                      | 00ID0876        |              | No                 |
| 37b               | Sleeve O-ring (option)                                   |       | 3/2-36 | ◆◆       | FKM, ø137.5 x 3.3mm                       | 96438743        |              | YES                |
|                   |                                                          |       | 3/2-36 | ◆◆       | FKM, ø137.5 x 3.3mm                       | 96438744        |              | YES                |
| 45                | Neck Ring                                                |       | 3/2-36 | ◆◆       | FXM, ø137.5 x 3.3mm                       | 96458109        |              | YES                |
|                   |                                                          |       | 3/2-36 | ◆◆       | FFKM, ø136.12 x 3.53mm                    | 96466718        |              | YES                |
| 47a               | Bearing Ring/Spacer                                      |       | 3/2-36 | # stgs   | ø41.3 x ø30.6 x .75mm, PTFE               | 400003          |              | YES                |
| 49                | Impeller                                                 |       | 3/2-36 | ^^^^     | SiC 150, ø17.37 x ø13.10 x ø10.9 x 13mm   | 96437488        |              | YES                |
|                   |                                                          |       | 3/2-36 | ^^^^     | TC, ø15.92 x ø13.10 x ø10.9 x 9.7mm       | 400041          |              | YES                |
| 49i               | Impeller (Low NPSH option)                               |       | 3/2-36 | # stgs   | ø73.6 x ø30.6 x 9.55mm (back-plate .5mm)  | 96433169        | 96547601     | No                 |
| 50a               | Top Guide Vane                                           |       | 3/2-36 | # stgs   | 96547601 has a qty. of 24                 | 96433169        |              | No                 |
| 51                | Top Guide Vane Plate (option for destaging)              |       | 3/2-36 | 1        | ø73.0 x ø35.0 x 13.2mm (back-plate 1.0mm) | 96437503        |              | No                 |
| 51                | Shaft, Complete                                          |       | 3-36   | 1        |                                           | 96457638        |              | No                 |
|                   |                                                          |       | 3/2    | 1        |                                           | 96478562        |              | No                 |
| 51                | Shaft, Complete                                          |       | 3/2-3  | 1        | ø12 x 160.5mm                             | 96439607        | 96588198     | No                 |
|                   |                                                          |       | 4      | 1        | ø12 x 180.5mm                             | 96440386        | 96588199     | No                 |
|                   |                                                          |       | 5      | 1        | ø12 x 196.5mm                             | 96440387        | 96588230     | No                 |
|                   |                                                          |       | 6      | 1        | ø12 x 214.5mm                             | 96440388        |              | No                 |
|                   |                                                          |       | 7      | 1        | ø12 x 234.5mm                             | 96440389        | 96588231     | No                 |
|                   |                                                          |       | 8      | 1        | ø12 x 250.5mm                             | 96440390        |              | No                 |
|                   |                                                          |       | 9      | 1        | ø12 x 268.5mm                             | 96440391        |              | No                 |
|                   |                                                          |       | 10     | 1        | ø12 x 288.5mm                             | 96440392        |              | No                 |
|                   |                                                          |       | 11     | 1        | ø12 x 304.5mm                             | 96440393        |              | No                 |
|                   |                                                          |       | 12     | 1        | ø12 x 322.5mm                             | 96440394        | 96588233     | No                 |
|                   |                                                          |       | 13     | 1        | ø12 x 342.5mm                             | 96440395        | 96588234     | No                 |
|                   |                                                          |       | 15     | 1        | ø12 x 376.5mm                             | 96440396        | 96588235     | No                 |
|                   |                                                          |       | 17     | 1        | ø12 x 412.5mm                             | 96440398        |              | No                 |
|                   |                                                          |       | 19     | 1        | ø12 x 450.5mm                             | 96440400        |              | No                 |
|                   |                                                          |       | 21     | 1        | ø12 x 484.5mm                             | 96440401        | 96588236     | No                 |
|                   |                                                          |       | 23     | 1        | ø12 x 520.5mm                             | 96440403        |              | No                 |
|                   |                                                          |       | 25     | 1        | ø12 x 556.5mm                             | 96440405        | 96588237     | No                 |
|                   |                                                          |       | 27     | 1        | ø12 x 592.5mm, 4 pole & 50 Hz.            | 96440406        |              | No                 |
|                   |                                                          |       | 29     | 1        | ø12 x 628.5mm, 4 pole & 50 Hz.            | 96440407        |              | No                 |
|                   |                                                          |       | 31     | 1        | ø12 x 664.5mm, 4 pole & 50 Hz.            | 96440409        |              | No                 |
|                   |                                                          |       | 33     | 1        | ø12 x 700.5mm, 4 pole & 50 Hz.            | 96440410        |              | No                 |
|                   |                                                          |       | 36     | 1        | ø12 x 754.5mm, 4 pole & 50 Hz.            | 96440411        | 96588238     | No                 |
| 51                | Shaft, Cpl. (Cool Top®, Back-to-Back&Tandem Seal option) |       | 3/2-3  | 1        | ø12 x 265.5mm                             | 96457560        |              | No                 |
|                   |                                                          |       | 4      | 1        | ø12 x 285.5mm                             | 96457561        |              | No                 |
|                   |                                                          |       | 5      | 1        | ø12 x 301.5mm                             | 96457562        |              | No                 |
|                   |                                                          |       | 6      | 1        | ø12 x 319.5mm                             | 96457563        |              | No                 |
|                   |                                                          |       | 7      | 1        | ø12 x 339.5mm                             | 96457564        |              | No                 |
|                   |                                                          |       | 8      | 1        | ø12 x 355.5mm                             | 96457565        |              | No                 |
|                   |                                                          |       | 9      | 1        | ø12 x 373.5mm                             | 96457566        |              | No                 |
|                   |                                                          |       | 10     | 1        | ø12 x 393.5mm                             | 96457567        |              | No                 |
|                   |                                                          |       | 11     | 1        | ø12 x 409.5mm                             | 96457568        |              | No                 |
|                   |                                                          |       | 12     | 1        | ø12 x 427.5mm                             | 96457569        |              | No                 |
|                   |                                                          |       | 13     | 1        | ø12 x 447.5mm                             | 96457570        |              | No                 |
|                   |                                                          |       | 15     | 1        | ø12 x 481.5mm                             | 96457571        |              | No                 |
|                   |                                                          |       | 17     | 1        | ø12 x 517.5mm                             | 96457573        |              | No                 |
|                   |                                                          |       | 19     | 1        | ø12 x 555.5mm                             | 96457575        |              | No                 |
|                   |                                                          |       | 21     | 1        | ø12 x 589.5mm                             | 96457576        |              | No                 |
|                   |                                                          |       | 23     | 1        | ø12 x 625.5mm                             | 96457578        |              | No                 |
|                   |                                                          |       | 25     | 1        | ø12 x 661.5mm                             | 96457580        |              | No                 |
|                   |                                                          |       | 27     | 1        | ø12 x 697.5mm, 4 pole & 50 Hz.            | 96457581        |              | No                 |
|                   |                                                          |       | 29     | 1        | ø12 x 733.5mm, 4 pole & 50 Hz.            | 96457582        |              | No                 |
|                   |                                                          |       | 31     | 1        | ø12 x 769.5mm, 4 pole & 50 Hz.            | 96457584        |              | No                 |
|                   |                                                          |       | 33     | 1        | ø12 x 805.5mm, 4 pole & 50 Hz.            | 96457585        |              | No                 |
|                   |                                                          |       | 36     | 1        | ø12 x 859.5mm, 4 pole & 50 Hz.            | 96457586        |              | No                 |
| 55                | Outer Sleeve                                             |       | 3/2-3  | 1        | ø138 x 44.6mm                             | 96439996        |              | No                 |
|                   |                                                          |       | 4      | 1        | ø138 x 62.6mm                             | 96440025        |              | No                 |
|                   |                                                          |       | 5      | 1        | ø138 x 80.6mm                             | 96441528        |              | No                 |

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|-------------------|-------------------------------------------------------|-----------|--------|----------|-------------------------------------------------|-----------------|--------------|--------------------|
| <b>PARTS LIST</b> |                                                       |           |        |          |                                                 |                 |              |                    |
| 55                | Outer Sleeve (Continued)                              |           | 6      | 1        | ø138 x 98.6mm                                   | 96440014        |              | No                 |
|                   |                                                       |           | 7      | 1        | ø138 x 116.6mm                                  | 96441529        |              | No                 |
|                   |                                                       |           | 8      | 1        | ø138 x 134.6mm                                  | 96441531        |              | No                 |
|                   |                                                       |           | 9      | 1        | ø138 x 152.6mm                                  | 96440015        |              | No                 |
|                   |                                                       |           | 10     | 1        | ø138 x 170.6mm                                  | 96441532        |              | No                 |
|                   |                                                       |           | 11     | 1        | ø138 x 188.6mm                                  | 96441534        |              | No                 |
|                   |                                                       |           | 12     | 1        | ø138 x 206.6mm                                  | 96440016        |              | No                 |
|                   |                                                       |           | 13     | 1        | ø138 x 224.6mm                                  | 96441535        |              | No                 |
|                   |                                                       |           | 15     | 1        | ø138 x 260.6mm                                  | 96440017        |              | No                 |
|                   |                                                       |           | 17     | 1        | ø138 x 296.6mm                                  | 96441538        |              | No                 |
|                   |                                                       |           | 19     | 1        | ø138 x 332.6mm                                  | 96441539        |              | No                 |
|                   |                                                       |           | 21     | 1        | ø138 x 368.6mm                                  | 96440019        |              | No                 |
|                   |                                                       |           | 23     | 1        | ø138 x 404.6mm                                  | 96441542        |              | No                 |
|                   |                                                       |           | 25     | 1        | ø138 x 440.6mm                                  | 96441543        |              | No                 |
|                   |                                                       |           | 27     | 1        | ø138 x 476.6mm, 4 pole & 50 Hz.                 | 96440021        |              | No                 |
|                   |                                                       |           | 29     | 1        | ø138 x 512.6mm, 4 pole & 50 Hz.                 | 96441544        |              | No                 |
|                   |                                                       |           | 31     | 1        | ø138 x 548.6mm, 4 pole & 50 Hz.                 | 96441545        |              | No                 |
|                   |                                                       |           | 33     | 1        | ø138 x 584.6mm, 4 pole & 50 Hz.                 | 96440023        |              | No                 |
|                   |                                                       |           | 36     | 1        | ø138 x 638.6mm, 4 pole & 50 Hz.                 | 96439997        |              | No                 |
| 55b               | Sleeve flange                                         |           | 3/2-36 | 1        | Cast stainless Din 1.4408 (316C16)              | 96834154        |              | No                 |
| 56a               | Foot for Pos. 6 Cast Iron                             |           | 3/2-36 | 1        | H=43mm, W=196mm, ø16mm hole CL 152mm, CI        | 95922025        |              | No                 |
|                   | Foot for Pos. 6 Stainless Steel option for GI         |           | 3/2-36 | 1        | H=43mm, W=196mm, ø16mm hole CL 152mm, SS        | 95922078        |              | No                 |
| 56b(d)            | Washer for bolt Pos. 56c                              |           | 3/2-36 | 16       | M8, ø16 x ø8.4x 1.6mm, 316 SS                   | 97672740        |              | No                 |
| 56c               | Bolt for sleeve flange Pos. 55b                       |           | 3/2-36 | 8        | M8x1.25-6g x45mm, 316 SS, Delta Tone/Seal       | 97672731        |              | No                 |
| 56e               | Nut for bolt Pos. 56c                                 |           | 3/2-36 | 8        | M8, NV13 x1.25-6H 316 SS, DeltaTone/Seal        | 97672737        |              | No                 |
| 56f               | Bolt for base Pos. 90                                 | 56C/182TC | 3/2-36 | 2        | Hex Hd.1/2 -13 UNC x 1" SAE 5, Zinc plated      |                 |              | YES                |
| 56g               | Washer for bolt Pos. 56f                              |           | 3/2-36 | 2        | 1/2" SAE, Zinc plated                           |                 |              | YES                |
| 60                | Stack Compression Spring                              |           | 3/2-36 | 1        | ø136 x 3.5mm                                    | 96439662        |              | No                 |
| 64                | Spacing Pipe                                          |           | 2-36   | ^^^      | ø15.85 x ø12.85 x 17.52mm                       | 400035          | 95061339     | No                 |
| 64a               | Spacing Pipe                                          |           | 3/2-36 | ^^^^     | ø15.85 x ø12.85 x 4.5mm                         | 96440292        |              | YES                |
|                   | Spacing Pipe (option for Graflon Pos. 4a)             |           | 3/2-36 | ^^^^     | Use with TC Pos.47a, ø15 x ø12.7 x 7.8mm        | 400016          |              | YES                |
| 64c               | Clamp, Splined                                        |           | 3/2-36 | 1        | ø15 x ø13.10 x ø10.9 x 13mm                     | 96439668        |              | YES                |
| 65                | Neck Ring Retainer                                    |           | 3/2-36 | # stgs   | ø43.5 x ø34.0 x 3.6mm                           | 96438746        |              | YES                |
| 66                | Lock Washer Set for Shaft                             |           | 3/2-36 | 1        | ø13.5 x ø8.2 x 2.6mm                            | 96417297        |              | YES                |
| 66a               | Washer for Staybolt                                   |           | 3/2-36 | 4        | DIN 125A, 304SS, ø24 x ø13 x 2.5mm              | 00ID3103        |              | No                 |
| 67                | Lock Nut for Shaft                                    |           | 3/2-36 | 1        | 13mm x M8                                       | 00ID2061        |              | YES                |
| 69                | Spacing Pipe                                          |           | 3/2    | 1        | ø15.85 x 12.85 x 18.0mm                         | 400125          | 95061443     | No                 |
| 72a               | Sleeve Flange O-ring                                  |           | 3/2-36 | 1        | EPDM, ø137.5 x 3.3mm                            | 96438743        | 97683277     | YES                |
|                   |                                                       |           | 3/2-36 | 1        | FKM, ø137.5 x 3.3mm                             | 96438744        | 97683278     | YES                |
|                   | Sleeve Flange O-ring (option)                         |           | 3/2-36 | 1        | FXM, ø137.5 x 3.3mm                             | 96458109        | 97683279     | YES                |
|                   |                                                       |           | 3/2-36 | 1        | FFKM, ø136.12 x 3.53mm                          | 96466718        | 97683280     | YES                |
| 76                | Nameplate                                             |           | 3/2-36 | 1        | 304SS, 60 x 45mm                                | 96439820        |              | No                 |
| 76a               | Rivet for Nameplate                                   |           | 3/2-36 | 2        | 304SS, ø3 x 5mm                                 | 96022882        |              | No                 |
| 77                | Pump Head Cover for Motor Stool Pos. 2                |           | 3/2-36 | 1        | Cast Stainless                                  | 96436340        |              | No                 |
| 77a               | Pump Head Cover for Back-to-Back & Tandem Seal        |           | 3/2-36 | 1        | Cast Stainless                                  | 96456293        |              | No                 |
| 77a               | Pump Head Cover for Cool Top® (option)                |           | 3/2-36 | 1        | Cast Stainless                                  | 96456294        |              | No                 |
| 79                | Disc / Plate for Cool Top®                            |           | 3/2-36 | 1        | Stainless                                       | 96456296        |              | No                 |
| 90                | Main Support Baseplate                                | GA        | 3/2-17 | 1        | BP. Cpl.139, L=991mm x W=305mm x H=106.5mm      | 96956336        |              | YES                |
|                   | Main Support Baseplate - Longer versions              | GA        | 19-25  | 1        | XLBP1 (139), L=1500mmxW=381mmxH=106.5mm         | 96956376        |              | YES                |
| 90a               | Bolt for motor to slider Pos. 90b                     | 56C       | 3/2-12 | 4        | Hex Head 5/16 -18 UNC x .75" SAE 5, Zinc plated |                 |              | YES                |
|                   |                                                       | 182TC     | 13-25  | 4        | Hex Head 3/8 -16 UNC x .5" SAE 5, Zinc plated   |                 |              | YES                |
| 90b               | Motor support /slide rail                             | 56C       | 3/2-12 | 2        | BP139, L=204mm x H=45.5mm x W=25.4mm            | 96956339        |              | YES                |
|                   |                                                       | 182TC     | 13-25  | 2        | BP139, L=230mm x H=23.0mm x W=25.4mm            | 96956338        |              | YES                |
| 90c               | Support Bracket for Pump Cartridge                    |           | 3/2-36 | 1        | 304 SS, H=74mm CL of hole, GA                   | 95131235        |              | No                 |
| 90d               | Bolt for motor slide rail Pos. 90b to base Pos. 90    | 56C       | 3/2-12 | 4        | Hex Head 1/4 -20 UNC x 1" SAE 5, Zinc plated    |                 |              | YES                |
|                   |                                                       | 182TC     | 13-25  | 4        | Hex Head 1/4-20 UNC x1.75" SAE 5, Zinc plated   |                 |              | YES                |
| 90f               | Washer for motor bolt Pos. 90a to slide rail Pos. 90b | 56C       | 3/2-12 | 4        | 5/16" SAE, Zinc plated                          |                 |              | YES                |
|                   |                                                       | 182TC     | 13-25  | 4        | 3/8" SAE, Zinc plated                           |                 |              | YES                |
| 100               | Priming/Vent Plug O-ring                              |           | 3/2-36 | ■        | EPDM, ø16.3 x 2.4mm                             | 00ID1288        |              | YES                |
|                   |                                                       |           | 3/2-36 | ■        | FKM, ø16.3 x 2.4mm                              | 00ID2231        |              | YES                |
| 100(a)            | Priming/Vent Plug O-ring (option)                     |           | 3/2-36 | ■        | FFKM, ø16.3 x 2.4mm                             | 96428162        |              | YES                |
|                   |                                                       |           | 3/2-36 | ■        | FXM, ø16.3 x 2.4mm                              | 96442869        |              | YES                |
| 102               | O-ring for Pos. 105b Back-to-Back                     |           | 3/2-36 | 1        | EPDM, ø18 x 2.5mm                               | 00ID2041        |              | YES                |
|                   |                                                       |           | 3/2-36 | 1        | FKM, ø17.86 x 2.62mm                            | 00ID2187        |              | YES                |
|                   | O-ring for Pos. 105b Back-to-Back (option)            |           | 3/2-36 | 1        | FFKM, ø17.86 x 2.62mm                           | 96440281        |              | No                 |
|                   |                                                       |           | 3/2-36 | 1        | FXM, ø17.86 x 2.62mm                            | 96472584        |              | No                 |
| 103               | Stationary Seal Ring for 105b Back-to-Back            |           | 3/2-36 | 1        | TC, 12mm                                        | 980190          |              | No                 |
| 103               | Stationary Seal Ring for 105b Back-to-Back (opt.)     |           | 3/2-36 | 1        | SiC, 12mm                                       | 980746          |              | YES                |
| 104               | Rotating Seal Ring for 105b Back-to-Back              |           | 3/2-36 | 1        | TC, 12mm                                        | 980163          |              | No                 |
|                   | Rotating Seal Ring for 105b Back-to-Back (opt.)       |           | 3/2-36 | 1        | SiC, 12mm                                       | 980733          |              | YES                |



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# Parts List & Kits **CRN3-H**

| Pos.<br>No.       | Part Description                                   | Model | Stages | No.<br>Used | Comments/Dimensions                            | B.O.M.<br>Ref. No. | Material<br>No. | Included<br>in kits ? |
|-------------------|----------------------------------------------------|-------|--------|-------------|------------------------------------------------|--------------------|-----------------|-----------------------|
| <b>PARTS LIST</b> |                                                    |       |        |             |                                                |                    |                 |                       |
| 105(b)            | Shaft Seal HQBE                                    |       | 3/2-36 | ***         | SiC, Carbon with resin-impregnated, EPDM       | 96441879           |                 | YES                   |
|                   | Shaft Seal HQBV                                    |       | 3/2-36 | ***         | SiC, Carbon with resin-impregnated, FKM        | 96441880           |                 | YES                   |
|                   | Shaft Seal HQBK (option)                           |       | 3/2-36 | ***         | SiC, Carbon with resin-impregnated, FFKM       | 96489537           |                 | YES                   |
|                   | Shaft Seal HQQE                                    |       | 3/2-36 | ***         | SiC, SiC, EPDM                                 | 96441877           |                 | YES                   |
|                   | Shaft Seal HQQV                                    |       | 3/2-36 | ***         | SiC, SiC, FKM                                  | 96441878           |                 | YES                   |
|                   | Shaft Seal HQQF (option)                           |       | 3/2-36 | ***         | SiC, SiC, FXM                                  | 96472620           |                 | YES                   |
|                   | Shaft Seal HQQK (option)                           |       | 3/2-36 | ***         | SiC, SiC, FFKM                                 | 96464381           |                 | YES                   |
|                   | Shaft Seal HUBE                                    |       | 3/2-36 | ***         | TC, Carbon with resin-impregnated, EPDM        | 96441873           |                 | YES                   |
|                   | Shaft Seal HUBV                                    |       | 3/2-36 | ***         | TC, Carbon with resin-impregnated, FKM         | 96441874           |                 | YES                   |
|                   | Shaft Seal HUBF (option)                           |       | 3/2-36 | ***         | TC, Carbon with resin-impregnated, FXM         | 96481464           |                 | YES                   |
|                   | Shaft Seal HUBK (option)                           |       | 3/2-36 | ***         | TC, Carbon with resin-impregnated, FFKM        | 96481463           |                 | YES                   |
|                   | Shaft Seal HUUE                                    |       | 3/2-36 | ***         | TC, TC, EPDM                                   | 96441875           |                 | YES                   |
|                   | Shaft Seal HUUV                                    |       | 3/2-36 | ***         | TC, TC, FKM                                    | 96441876           |                 | YES                   |
|                   | Shaft Seal HUUF (option)                           |       | 3/2-36 | ***         | TC, TC, FXM                                    | 96475542           |                 | YES                   |
|                   | Shaft Seal HUUK (option)                           |       | 3/2-36 | ***         | TC, TC, FFKM                                   | 96467885           |                 | YES                   |
| 105b              | Shaft Seal/inboard for Back-to-Back OQQE           |       | 3/2-36 | 1           | SiC, SiC, EPDM                                 | 985200             |                 | YES                   |
|                   | Shaft Seal/inboard for Back-to-Back OQQV           |       | 3/2-36 | 1           | SiC, SiC, FKM                                  | 985760             |                 | YES                   |
|                   | Shaft Seal/inboard for Back-to-Back OUUE           |       | 3/2-36 | 1           | TC, TC, EPDM                                   | 985189             | 405145          | YES                   |
|                   | Shaft Seal/inboard for Back-to-Back OUUV           |       | 3/2-36 | 1           | TC, TC, FKM                                    | 985190             | 405145          | YES                   |
| 107               | O-ring for Pos. 105b Back-to-Back                  |       | 3/2-36 | 1           | EPDM, ø11.5 x 4.3mm                            | 00ID2040           |                 | YES                   |
|                   |                                                    |       | 3/2-36 | 1           | FKM, ø11.5 x 4.3mm                             | 00ID2186           |                 | YES                   |
|                   | O-ring for Pos. 105b Back-to-Back (option)         |       | 3/2-36 | 1           | FFKM, ø11.5 x 4.3mm                            | 96440282           |                 | No                    |
|                   |                                                    |       | 3/2-36 | 1           | FXM, ø11.5 x 3.18mm                            | 96472618           |                 | No                    |
| 108               | Spring for Pos. 105b Back-to-Back                  |       | 3/2-36 | 1           | 12mm                                           | 980195             |                 | YES                   |
| 109(a)            | O-ring for Shaft Seal Pos. 105                     |       | 3/2-36 | 1           | EPDM, ø21.3 x 3.0mm                            | 00ID1798           |                 | YES                   |
|                   |                                                    |       | 3/2-36 | 1           | FKM, ø21.2 x 3.0mm                             | 00ID2339           |                 | YES                   |
| 109b              | O-ring for Shaft Seal Pos. 105 (option)            |       | 3/2-36 | 1           | FXM, ø22 x 2.75mm                              | 96458111           |                 | YES                   |
|                   |                                                    |       | 3/2-36 | 1           | FFKM, ø23.47 x 2.62mm                          | 96464384           |                 | YES                   |
| 111               | Seal Driver (small) for Pos. 105b Back-to-Back     |       | 3/2-36 | 1           |                                                | 980192             |                 | YES                   |
| 112               | Seal Driver (large) for Pos. 105b Back-to-Back     |       | 3/2-36 | 1           |                                                | 980191             |                 | YES                   |
| 112a              | Seal Drv threaded for 112, Pos. 105b Back-to-Back  |       | 3/2-36 | 1           |                                                | 400203             |                 | YES                   |
| 113               | Set Screw for 112a, for Pos. 105b Back-to-Back     |       | 3/2-36 | 1           | 3mm x M5 x 6mm                                 | 00ID7392           |                 | YES                   |
| 117               | Air Vent Pipe for 118                              |       | 3/2-36 | 1           | G1/2, 316SS, 60 x 43mm                         | 96525189           |                 | YES                   |
| 117a              | Counter Nut for Pipe 117                           |       | 3/2-36 | 1           | NV24, internal G1/2, 316SS                     | 96506709           |                 | YES                   |
| 118               | Air Vent                                           |       | 3/2-36 | 1           | Air vent type 1511-AV - 5/6430                 | 96427483           |                 | YES                   |
| 146               | Allen Bolt for 147/148, for Pos. 105b Back-to-Back |       | 3/2-36 | 1           | 2.5mm x M3 x 5mm                               | 96462639           |                 | YES                   |
| 147               | Stationary Seal Retainer - Pos. 105b Back-to-Back  |       | 3/2-36 | 1           | NV36, 316SS                                    | 96457354           |                 | No                    |
| 148               | Seal Retainer Washer - Pos. 105b Back-to-Back      |       | 3/2-36 | 1           | 316SS, ø36.0 x ø21.6 x 5.0mm                   | 96457355           |                 | No                    |
| 149               | Connecting Pipe for Cool Top®                      |       | 3/2-36 | 1           | NV36, 316SS, FXM & EPDM                        | 96460414           |                 | No                    |
|                   |                                                    |       | 3/2-36 | 1           | NV36, 316SS, FXM & FKM                         | 96460415           |                 | No                    |
| 149a              | Retainer for bushing                               |       | 3/2-36 | 1           | 316SS, ø22.0 x ø17.0 x 9mm                     | 96457639           |                 | YES                   |
| 149b              | Bushing                                            |       | 3/2-36 | 1           | Graflon®, ø21.2 x ø12.4 x 53mm                 | 96456297           |                 | YES                   |
| 149c              | Connecting Pipe less 109 a&b and 149 a&b           |       | 3/2-36 | 1           | NV36, 316SS                                    | 96456295           |                 | YES                   |
| 201               | Flange, Suction, Cast Iron                         |       | 3/2-15 | 1           | 1.5" 150#, 4x1/2"-13 UNC threaded flange, e-c  | 96922828           |                 | No                    |
|                   |                                                    |       | 3/2-36 | 1           | 1.5" 300#, 4x3/4"-10 UNC threaded flange, e-c  | 96956145           |                 | No                    |
|                   | Flange, Suction, Stainless Steel option for GI     |       | 3/2-15 | 1           | 1.5" 150#, 4x1/2"-13 UNC threaded flange       | 97644306           |                 | No                    |
|                   |                                                    |       | 3/2-36 | 1           | 1.5" 300#, 4x3/4"-10 UNC threaded flange       | 97644307           |                 | No                    |
| 201a              | Flange, Discharge, Cast Iron                       |       | 3/2-15 | 1           | 1" 150#, 4x1/2"-13 UNC threaded flange, e-coat | 96922827           |                 | No                    |
|                   |                                                    |       | 3/2-36 | 1           | 1" 300#, 4x5/8"-11 UNC threaded flange, e-coat | 96956144           |                 | No                    |
|                   | Flange, Discharge, Stainless Steel option for GI   |       | 3/2-15 | 1           | 1" 150#, 4x1/2"-13 UNC threaded flange         | 97644302           |                 | No                    |
|                   |                                                    |       | 3/2-36 | 1           | 1" 300#, 4x3/4"-10 UNC threaded flange         | 97644304           |                 | No                    |
| 203               | Retaining ring for 201, 1.5" flange                |       | 3/2-36 | 1           | Stainless, ø72.6 x 5                           | 96475395           |                 | No                    |
| 203a              | Retaining ring for 201a, 1.0" flange               |       | 3/2-36 | 1           | Stainless, ø53.6 x 3.2                         | 96439718           |                 | No                    |

Due to part changes over time, all position numbers (1-203) may not be used.

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## Notes:

The first number is total number of impellers. An exception to this format is the CRN3-2H. **Example: a CRN3-2H is actually a CRN3-3/2H, it has 3 chambers and 2 impellers (de-staged by 1) - it uses a 3 stage shaft.**

- ^^ 3/2 to 9 stage= # of Stages less 2  
10 to 19 stage= # of stages less 3  
21 to 27 stage = # of stages less 4  
29 to 36 stage = # of stages less 5  
Exception: When de-staging pump by 2 impellers, replace top chamber Pos. 4 with Pos. 5a
- ^^^ 3/2 to 9 stage= use 1  
10 to 19 stage= use 2  
21 to 27 stage = use 3  
29 to 36 stage = use 4
- \* Standard use 1. Back-to-Back or Tandem pump version use 3
- \*\* Standard use 1. Back-to-Back or Tandem pump version use 3
- \*\*\* 1 used in Hxxx (Standard), 2 used in Pxxx (Tandem) pump version
- ◆◆ Standard use 2. Back-to-Back or Tandem pump version use 3
- Standard use 2. Back-to-Back or Tandem pump version use 6
- 1\* Standard use 1. When de-staging pump by 2 impellers, replace top chamber Pos. 4 with an additional Pos. 5a

## Key to Symbols:

|      |       |                                                                                         |
|------|-------|-----------------------------------------------------------------------------------------|
| KITS | ..... | Recommended spare part                                                                  |
| Ø    | ..... | Diameter                                                                                |
| ANSI | ..... | American National Standards Institute                                                   |
| CPL  | ..... | Complete Assembly – these parts consist of more than one component                      |
| EPDM | ..... | Ethylene Propylene (also known as EPR and EPT) – an elastic substance similar to rubber |
| FFKM | ..... | Kalrez Elastomer made by DuPont                                                         |
| FKM  | ..... | Fluoro Elastomer (generic for Viton)                                                    |
| FXM  | ..... | Fluoraz Elastomer made by Greene Tweed                                                  |
| M    | ..... | International standard thread size designation (thread diameter in mm)                  |
| mm   | ..... | Millimeter                                                                              |
| MG   | ..... | Identifies Grundfos motor type/size                                                     |
| N    | ..... | Stainless                                                                               |
| NBR  | ..... | Buna - N (also known as Nitrile) – an elastic substance similar to rubber               |
| NEMA | ..... | National Electrical Manufacturers Association                                           |
| PTFE | ..... | Teflon                                                                                  |
| SiC  | ..... | Silicon Carbide                                                                         |
| TC   | ..... | Tungsten Carbide                                                                        |
| UNC  | ..... | Unified National Coarse – a standard for threads on bolts                               |

# Spare Part Kits CRN3-H

## Spare Part Kits

Since certain pump parts can be expected to exhibit wear at the same time as related pump parts, they have been grouped into the following kits for your convenience. The numbers indicate the quantity of the part within each kit. Please order these kits using the kit material number at the top of the columns.

| CR(I, N)15, 1, & 3 SiC Bearing |                                              |              |                           |    |    |    |
|--------------------------------|----------------------------------------------|--------------|---------------------------|----|----|----|
| WEAR PARTS KIT 2-9             |                                              |              | Kit No. 96455095          |    |    |    |
| WEAR PARTS KIT 10-19           |                                              |              | Kit No. 96455092          |    |    |    |
| WEAR PARTS KIT 20-27           |                                              |              | Kit No. 96455093          |    |    |    |
| WEAR PARTS KIT 28-36           |                                              |              | Kit No. 96455094          |    |    |    |
| Pos. No.                       | Description                                  | Material No. | Qty. Included in each Kit |    |    |    |
| 4a                             | Chamber N Cpl. w/Pos.45 & 65 & SiC Bearing   | 96439476     | 1                         | 2  | 3  | 4  |
| 39                             | Gasket for Oval Flange, 95 x 55 x ø35 x 2mm  | 400189       | 2                         | 2  | 2  | 2  |
| 45                             | Neck Ring, ø41.3 x ø30.6 x .75mm, PTFE       | 400003       | 8                         | 17 | 24 | 32 |
| 47a                            | Bearing Ring/Spacer, SiC 150, 13mm           | 96437488     | 1                         | 2  | 3  | 4  |
| 64a                            | Spacing Pipe, ø15.85 x ø12.85 x 4.5mm        | 96440292     | 1                         | 2  | 3  | 4  |
| 64c                            | Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm  | 96439668     | 1                         | 1  | 1  | 1  |
| 65                             | Neck Ring Retainer, N, ø43.5 x ø34.0 x 3.6mm | 96438746     | 8                         | 17 | 24 | 32 |
| 66                             | Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm   | 96417297     | 1                         | 1  | 1  | 1  |
| 67                             | Lock Nut, 13mm x M8                          | 00ID2061     | 1                         | 1  | 1  | 1  |

| CR(I, N)15, 1, & 3 Graflon Bearing |                                              |              |                           |    |    |    |
|------------------------------------|----------------------------------------------|--------------|---------------------------|----|----|----|
| WEAR PARTS KIT 2-9                 |                                              |              | Kit No. 96460140          |    |    |    |
| WEAR PARTS KIT 10-19               |                                              |              | Kit No. 96455110          |    |    |    |
| WEAR PARTS KIT 20-27               |                                              |              | Kit No. 96455111          |    |    |    |
| WEAR PARTS KIT 28-36               |                                              |              | Kit No. 96455112          |    |    |    |
| Pos. No.                           | Description                                  | Material No. | Qty. Included in each Kit |    |    |    |
| 4a                                 | Chamber N Cpl. w/Pos.45 & 65 & Graflon Brg.  | 96440615     | 1                         | 2  | 3  | 4  |
| 39                                 | Gasket for Oval Flange, 95 x 55 x ø35 x 2mm  | 400189       | 2                         | 2  | 2  | 2  |
| 45                                 | Neck Ring, ø41.3 x ø30.6 x .75mm, PTFE       | 400003       | 8                         | 17 | 24 | 32 |
| 47a                                | Bearing Ring/Spacer, TC, 9.7mm               | 400041       | 1                         | 2  | 3  | 4  |
| 64a                                | Spacing Pipe, ø15.85 x ø12.85 x 7.8mm        | 400016       | 1                         | 2  | 3  | 4  |
| 64c                                | Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm  | 96439668     | 1                         | 1  | 1  | 1  |
| 65                                 | Neck Ring Retainer, N, ø43.5 x ø34.0 x 3.6mm | 96438746     | 8                         | 17 | 24 | 32 |
| 66                                 | Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm   | 96417297     | 1                         | 1  | 1  | 1  |
| 67                                 | Lock Nut, 13mm x M8                          | 00ID2061     | 1                         | 1  | 1  | 1  |

| STANDARD SHAFT SEAL KIT, BALANCED CARTRIDGE           |                                      |              |                           |   |   |   |   |   |   |
|-------------------------------------------------------|--------------------------------------|--------------|---------------------------|---|---|---|---|---|---|
| (Maximum allowed working PSI is 435)                  |                                      |              |                           |   |   |   |   |   |   |
| (Tandem Seal option Pumps require 2 of each Seal Kit) |                                      |              |                           |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455088          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96491375          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455089          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455086          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96533327          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96533326          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455087          |   |   |   |   |   |   |
| Pos. No.                                              | Description                          | Material No. | Qty. Included in each Kit |   |   |   |   |   |   |
| 105                                                   | HQBE                                 | 96441879     | 1                         |   |   |   |   |   |   |
|                                                       | HQBK                                 | 96489537     |                           | 1 |   |   |   |   |   |
|                                                       | HQBV                                 | 96441880     |                           |   | 1 |   |   |   |   |
|                                                       | HQQE                                 | 96441877     |                           |   |   | 1 |   |   |   |
|                                                       | HQQF                                 | 96472620     |                           |   |   |   | 1 |   |   |
|                                                       | HQQK                                 | 96498109     |                           |   |   |   |   | 1 |   |
|                                                       | HQQV                                 | 96441878     |                           |   |   |   |   |   | 1 |
| N/A                                                   | Grinding Device Tool for Emery Cloth | 370711       | 1                         | 1 | 1 | 1 | 1 | 1 | 1 |
| N/A                                                   | Emery Cloth                          | 370712       | 1                         | 1 | 1 | 1 | 1 | 1 | 1 |

| OPTIONAL SHAFT SEAL KIT, BALANCED CARTRIDGE           |                                      |              |                           |   |   |   |   |   |   |
|-------------------------------------------------------|--------------------------------------|--------------|---------------------------|---|---|---|---|---|---|
| (Maximum allowed working PSI is 435)                  |                                      |              |                           |   |   |   |   |   |   |
| (Tandem Seal option Pumps require 2 of each Seal Kit) |                                      |              |                           |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455082          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96533323          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96533322          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455083          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455084          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96533325          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96533324          |   |   |   |   |   |   |
|                                                       |                                      |              | Kit No. 96455085          |   |   |   |   |   |   |
| Pos. No.                                              | Description                          | Material No. | Qty. Included in each Kit |   |   |   |   |   |   |
| 105                                                   | HUBE                                 | 96441873     | 1                         |   |   |   |   |   |   |
|                                                       | HUBF                                 | 96481464     |                           | 1 |   |   |   |   |   |
|                                                       | HUBK                                 | 96481463     |                           |   | 1 |   |   |   |   |
|                                                       | HUBV                                 | 96441874     |                           |   |   | 1 |   |   |   |
|                                                       | HUUE                                 | 96441875     |                           |   |   |   | 1 |   |   |
|                                                       | HUUF                                 | 96475542     |                           |   |   |   |   | 1 |   |
|                                                       | HUUK                                 | 96498108     |                           |   |   |   |   |   | 1 |
| N/A                                                   | Grinding Device Tool for Emery Cloth | 370711       | 1                         | 1 | 1 | 1 | 1 | 1 | 1 |
| N/A                                                   | Emery Cloth                          | 370712       | 1                         | 1 | 1 | 1 | 1 | 1 | 1 |



**Spare Part Kits** (continued)

| INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQQE                                     |                                                    | Kit No.      | 96533360                  |   |        |   |
|----------------------------------------------------------------------------------------|----------------------------------------------------|--------------|---------------------------|---|--------|---|
| INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQQV                                     |                                                    | Kit No.      | 96533361                  |   |        |   |
| INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQQV                                     |                                                    | Kit No.      | 96989183                  |   |        |   |
| INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQQK                                     |                                                    | Kit No.      | 96536168                  |   |        |   |
| INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQUE/V                                   |                                                    | Kit No.      |                           |   | 405145 |   |
| (An HQQx or HUUX seal kit must also be used for respectively to complete seal repairs) |                                                    |              |                           |   |        |   |
| Pos. No.                                                                               | Description                                        | Material No. | Qty. Included in each Kit |   |        |   |
| 37                                                                                     | Sleeve O-ring, EPDM, Ø137.5 x 3.3mm                | 96438743     | 3                         |   |        |   |
|                                                                                        | Sleeve O-ring, FKM, Ø137.5 x 3.3mm                 | 96438744     |                           | 3 |        |   |
| 38, 100(a)                                                                             | Drain Plug O-ring, EPDM, Ø16.3 x 2.4mm             | 00ID1288     | 7                         |   |        |   |
|                                                                                        | Drain Plug O-ring, FKM, Ø16.3 x 2.4mm              | 00ID2231     |                           | 7 |        |   |
| 102                                                                                    | O-ring, EPDM, Ø18 x 2.5mm                          | 00ID2041     | 1                         |   |        | 1 |
|                                                                                        | O-ring, FKM, Ø17.86 x 2.62mm                       | 00ID2187     |                           | 1 | 1      | 1 |
|                                                                                        | O-ring, FFKM, Ø17.86 x 2.62mm                      | 96440281     |                           |   |        | 1 |
| 103                                                                                    | Stationary Seal Ring, SiC,12mm                     | 980746       | 1                         |   |        |   |
|                                                                                        | Stationary Seal Ring, TC,12mm                      | 980190       |                           |   |        | 1 |
| 104                                                                                    | Rotating Seal Ring, SiC, 12mm                      | 980733       | 1                         | 1 | 1      | 1 |
|                                                                                        | Rotating Seal Ring, TC, 12mm                       | 989163       |                           |   |        | 1 |
| 107                                                                                    | O-ring, EPDM, Ø11.5 x 4.3mm                        | 00ID2040     | 1                         |   |        | 1 |
|                                                                                        | O-ring, FKM, Ø11.5 x 4.3mm                         | 00ID2186     |                           | 1 | 1      | 1 |
|                                                                                        | O-ring, FFKM, Ø11.5 x 4.3mm                        | 96440282     |                           |   | 1      |   |
|                                                                                        | Spring, 12mm                                       | 980195       | 1                         | 1 | 1      | 1 |
| 109a                                                                                   | O-ring, EPDM, Ø21.3 x 3.0mm                        | 00ID1798     | 1                         |   |        |   |
|                                                                                        | O-ring, FKM, Ø21.2 x 3.0mm                         | 00ID2339     |                           | 1 | 1      |   |
|                                                                                        | O-ring, FFKM, Ø23.47 x 2.62mm                      | 96464384     |                           |   |        | 1 |
|                                                                                        | Driver for pos.104                                 | 980192       | 1                         | 1 | 1      | 1 |
| 112                                                                                    | Driver for pos.111                                 | 980191       | 1                         | 1 | 1      | 1 |
| 112a                                                                                   | Driver for pos.112                                 | 400203       | 1                         | 1 | 1      |   |
|                                                                                        | Set Screw for pos.112a                             | 00ID7392     | 2                         | 2 | 2      | 2 |
| 146                                                                                    | Allen Bolt for pos.147 & 148, 2.5mm x M3 x 5mm     | 96462639     | 3                         | 3 | 3      | 3 |
| 147                                                                                    | Stationary Seal Retainer - NV36, 316SS             | 96457354     |                           |   | 1      | 1 |
| 148                                                                                    | Seal Retainer Washer -316SS, Ø36.0 x Ø21.6 x 5.0mm | 96457355     |                           |   | 1      | 1 |
| N/A                                                                                    | Grinding Device Tool for Emery Cloth               | 370711       |                           |   |        | 1 |
| N/A                                                                                    | Emery Cloth                                        | 370712       |                           |   |        | 1 |

| GASKET KIT (EPDM)                          |                                                    | Kit No.      | 96455090                  |   |   |   |   |   |   |  |
|--------------------------------------------|----------------------------------------------------|--------------|---------------------------|---|---|---|---|---|---|--|
| GASKET KIT (FKM)                           |                                                    | Kit No.      | 96455091                  |   |   |   |   |   |   |  |
| GASKET KIT (FXM)                           |                                                    | Kit No.      | 96463944                  |   |   |   |   |   |   |  |
| GASKET KIT (FFKM)                          |                                                    | Kit No.      | 96533328                  |   |   |   |   |   |   |  |
| GASKET KIT (EPDM)-Double Seal option.      |                                                    | Kit No.      | 96533362                  |   |   |   |   |   |   |  |
| GASKET KIT (FKM)-Double Seal option.       |                                                    | Kit No.      | 96533363                  |   |   |   |   |   |   |  |
| GASKET KIT (FFKM)-Double Seal option.      |                                                    | Kit No.      | 96533364                  |   |   |   |   |   |   |  |
| GASKET KIT (FXM, & EPDM) - Cool-Top option |                                                    | Kit No.      | 96533329                  |   |   |   |   |   |   |  |
| Pos. No.                                   | Description                                        | Material No. | Qty. Included in each Kit |   |   |   |   |   |   |  |
| 37                                         | Sleeve O-ring, EPDM, ø137.5 x 3.3mm                | 96438743     | 2                         |   |   |   | 3 |   | 1 |  |
|                                            | Sleeve O-ring, FKM, ø137.5 x 3.3mm                 | 96438744     |                           | 2 |   |   |   | 3 |   |  |
| 37b                                        | Sleeve O-ring, FXM, ø137.5 x 3.3mm                 | 96458109     |                           |   | 2 |   |   |   | 2 |  |
|                                            | Sleeve O-ring, FFKM, ø136.12 x 3.53mm              | 96466718     |                           |   |   | 2 |   |   |   |  |
| 38, 100(a)                                 | Drain Plug O-ring, EPDM, ø16.3 x 2.4mm             | 00ID1288     | 3                         |   |   |   | 7 |   | 4 |  |
|                                            | Drain Plug O-ring, FKM, ø16.3 x 2.4mm              | 00ID2231     |                           | 3 |   |   |   | 7 |   |  |
| 38, 100a                                   | Drain Plug O-ring, FXM, ø16.3 x 2.4mm              | 96442869     |                           |   | 3 |   |   |   | 3 |  |
|                                            | Drain Plug O-ring, FFKM, ø16.3 x 2.4mm             | 96428162     |                           |   |   | 3 |   |   |   |  |
| 109(a)                                     | O-ring for Pos.105(b) & 149, EPDM, ø21.3 x 3.0mm   | 00ID1798     | 1                         |   |   |   | 1 |   |   |  |
|                                            | O-ring for Pos.105(b) & 149, FKM, ø21.2 x 3.0mm    | 00ID2339     |                           | 1 |   |   |   | 1 |   |  |
| 109b                                       | O-ring for Pos.105(b) & 149, FXM, ø22.0 x 2.75mm   | 96458111     |                           |   | 1 |   |   |   | 2 |  |
|                                            | O-ring for Pos.105(b) & 149, FFKM, ø23.47 x 2.62mm | 96464384     |                           |   |   | 1 |   | 2 |   |  |

Add to above standard gaskets to complete desired CRH, CRNH model

| Kit, O-ring EPDM CRN-H1s to 5 |                                | Kit No.      | 97683277                  |   |          |          |
|-------------------------------|--------------------------------|--------------|---------------------------|---|----------|----------|
| Kit, O-ring FKM CRN-H1s to 5  |                                | Kit No.      | 97683278                  |   |          |          |
| Kit, O-ring FXM CRN-H1s to 5  |                                | Kit No.      |                           |   | 97683279 |          |
| Kit, O-ring FFKM CRN-H1s to 5 |                                | Kit No.      |                           |   |          | 97683280 |
| Pos. No.                      | Description                    | Material No. | Qty. Included in each Kit |   |          |          |
| 72a                           | O-ring EPDM ø145.6x3.5mm 2-256 | 97644314     | 1                         |   |          |          |
|                               | O-ring FKM ø145.6x3.5mm 2-256  | 97672715     |                           | 1 |          |          |
|                               | O-ring FXM ø145.6x3.5 2-256    | 97672716     |                           |   | 1        |          |
|                               | O-ring FFKM ø145.6x3.5mm 2-256 | 97672717     |                           |   |          | 1        |

| NEMA COUPLING KIT |                                            | ø15.8/ø12    | Kit No.                   | 415314   |  |   |
|-------------------|--------------------------------------------|--------------|---------------------------|----------|--|---|
|                   |                                            | ø28.5/ø12    | Kit No.                   | 415315   |  |   |
|                   |                                            | ø34.9/ø12    | Kit No.                   | 96478700 |  |   |
| Pos. No.          | Description                                | Material No. | Qty. Included in each Kit |          |  |   |
| 9                 | Allen Screw, M6 x 20mm, Delta Seal         | 00ID7899     | 4                         |          |  |   |
|                   | Allen Screw, M8 x 25mm, Delta Seal         | 00ID7900     |                           | 4        |  | 4 |
|                   | Allen Screw, M10 x 25mm, Delta Seal        | 00ID7901     |                           |          |  |   |
| 10                | Shaft Pin, ø5 x 26mm, Stainless            | 310192       | 1                         | 1        |  | 1 |
| 10a               | Coupling Half, 56C, 1/3 - 2HP, ø15.8 / ø12 | 410108       | 2                         |          |  |   |
|                   | Coupling Half, 182/184TC, 3-5HP, ø28.5/ø12 | 410109       |                           | 2        |  |   |
|                   | Coupling Half, 213TC, 7.5-10HP, ø34.9/ø12  | 96472175     |                           |          |  | 2 |

# Spare Part Kits • Accessories **CRN3-H**

## Spare Part Kits (continued)

| COUPLING GUARD KIT     |                                            |                  |                           |   |
|------------------------|--------------------------------------------|------------------|---------------------------|---|
| NEMA 56C, 1/3-2HP      |                                            | Kit No. 96505131 |                           |   |
| NEMA 182-215TC, 3-10HP |                                            | Kit No. 96505132 |                           |   |
| Pos. No.               | Description                                | Material No.     | Qty. Included in each Kit |   |
| 7                      | Coupling Guard, W=127mm x H=90.5mm         | 96438137         | 2                         |   |
|                        | Coupling Guard, W=157mm x H=171mm          | 96438138         |                           | 2 |
| 7a                     | Screw comb.slot torx/straight slot 4 x 8mm | 96488481         | 4                         | 4 |

| Air Vent Kit - Horizontal Units |                                           |                  |                           |   |
|---------------------------------|-------------------------------------------|------------------|---------------------------|---|
| CR-H, CRN-H15 to 20             |                                           | Kit No. 91136720 |                           |   |
| Pos. No.                        | Description                               | Material No.     | Qty. Included in each Kit |   |
| 117                             | Air Vent Pipe, short for 118, G1/2, 60x43 | 96525189         |                           | 1 |
| 117a                            | Counter Nut for Pipe 117, G1/2            | 96506709         |                           | 2 |
| 118                             | Air vent type 1511-AV - 5/6430            | 96427483         |                           | 1 |

| Connecting Pipe for Cool Top (EPDM, FKM & FXM) |                                                  |                  |                           |   |
|------------------------------------------------|--------------------------------------------------|------------------|---------------------------|---|
|                                                |                                                  | Kit No. 96578704 |                           |   |
| Pos. No.                                       | Description                                      | Material No.     | Qty. Included in each Kit |   |
| 109a                                           | O-ring for Pos.105(b) & 149, EPDM, Ø21.3 x 3.0mm | 00ID1798         |                           | 1 |
|                                                | O-ring for Pos.105(b) & 149, FKM, Ø21.2 x 3.0mm  | 00ID2339         |                           | 1 |
| 109b                                           | O-ring for Pos.105(b) & 149, FKM, Ø22.0 x 2.75mm | 96458111         |                           | 1 |
| 149a                                           | Retainer for bushing, 316SS, Ø22.0 x Ø17.0 x 9mm | 96457639         |                           | 1 |
| 149b                                           | Bushing, Graflon®, Ø21.2 x Ø12.4 x 53mm          | 96456297         |                           | 1 |
| 149c                                           | Connecting pipe, NV36, 316SS                     | 96456295         |                           | 1 |

## Accessories

| ANSI COMPANION FLANGES FOR CR-H, CRN-H15 to 20<br>1-1/2" and 1" Threaded Stainless, 150 Lb. Class |                                           |                  |                           |   |
|---------------------------------------------------------------------------------------------------|-------------------------------------------|------------------|---------------------------|---|
|                                                                                                   |                                           | Kit No. 97698645 |                           |   |
| Pos. No.                                                                                          | Description                               | Material No.     | Qty. Included in each Kit |   |
| N/A                                                                                               | Hex Head Cap Screw/Bolt 1/2"-13X 2" 316SS | 97743748         |                           | 8 |
| N/A                                                                                               | Flange ANSI #150 1.5" NPT 316SS           | 96983498         |                           | 1 |
| N/A                                                                                               | Flange ANSI #150 1" NPT 316SS             | 96983497         |                           | 1 |
| N/A                                                                                               | Gasket 1 1/2" Full Face 150 Lb. ANSI      | 97694409         |                           | 1 |
| N/A                                                                                               | Gasket 1" Full Face 150 Lb. ANSI          | 97692916         |                           | 1 |

| ANSI COMPANION FLANGES FOR SMALL CR<br>1-1/2" and 1" Threaded Stainless, 300 Lb. Class |                                               |                  |                           |   |
|----------------------------------------------------------------------------------------|-----------------------------------------------|------------------|---------------------------|---|
|                                                                                        |                                               | Kit No. 97698646 |                           |   |
| Pos. No.                                                                               | Description                                   | Material No.     | Qty. Included in each Kit |   |
| N/A                                                                                    | Hex Head Cap Screw/Bolt 3/4"-10 X 2.5" 316SS  | 91143035         |                           | 4 |
| N/A                                                                                    | Hex Head Cap Screw/Bolt 5/8"-11 X 2.25" 316SS | 91143029         |                           | 4 |
| N/A                                                                                    | Flange ANSI #300 1.5" NPT 316SS               | 96983496         |                           | 1 |
| N/A                                                                                    | Flange ANSI #300 1" NPT 316SS                 | 96983495         |                           | 1 |
| N/A                                                                                    | Gasket 1 1/2" Full Face 300 Lb. ANSI          | 97694408         |                           | 1 |
| N/A                                                                                    | Gasket 1" Full Face 300 Lb. ANSI              | 97694407         |                           | 1 |

| Baseplate Kit    |                                                             |                  |                           |   |
|------------------|-------------------------------------------------------------|------------------|---------------------------|---|
| 139 56C for GA   |                                                             | Kit No. 97534517 |                           |   |
| 182TC for GA     |                                                             | Kit No. 97534518 |                           |   |
| XLBP1 56C for GA |                                                             | Kit No. 97534573 |                           |   |
| 182TC for GA     |                                                             | Kit No. 97534574 |                           |   |
| Pos. No.         | Description                                                 | Material No.     | Qty. Included in each Kit |   |
| 90               | Baseplate Cpl. 139, L=991" x W=305" x H=106.5"              | 96956336         | 1                         | 1 |
|                  | Baseplate Cpl. XLBP1, L=1500" x W=305" x H=106.5"           | 96956376         |                           | 1 |
| N/A              | Slider & fastners for 56C (consists of slider & hardware)   | 96983855         | 1                         | 1 |
| N/A              | Slider & fastner for 182TC (consists of slider & hardware)  | 96983858         |                           | 1 |
| N/A              | Hardware Kit -96983855/68/78 (cont. pos.56f, g, 90a,d& f)** | 97501470         | 1                         | 1 |
| N/A              | Hardware Kit -96983858 (cont. pos.56f & g, 90a, d & f)**    | 97501481         |                           | 1 |
| 56f              | Bolt, Hex Head 1/2 -13 UNC x 1" SAE 5, Zinc plated          | N/A              | 2                         | 2 |
| 56g              | Washer, 1/2" SAE, Zinc plated                               | N/A              | 2                         | 2 |
| 90a              | Bolt, Hex Head 5/16 -18 UNC x .75" SAE 5, Zinc plated       | N/A              | 4                         | 4 |
|                  | Bolt, Hex Head 3/8 -16 UNC x .5" SAE 5, Zinc plated         | N/A              |                           | 4 |
| 90b              | Slider, GA/B/C 56C/139BP, L=204" x H=45.5" x W=25.4"        | 96956339         | 2                         | 2 |
|                  | Slider, GA/B/C 182TC/139 BP, L=230" x H=23" x W=25.4"       | 96956338         |                           | 2 |
| 90d              | Bolt, Hex Head 1/4 -20 UNC x 1" SAE 5, Zinc plated          | N/A              | 4                         | 4 |
|                  | Bolt, Hex Head 1/4 -20 UNC x 1.75" SAE 5, Zinc plated       | N/A              |                           | 4 |
| 90f              | Washer, 5/16" SAE, Zinc plated                              | N/A              | 4                         | 4 |
|                  | Washer, 3/8" SAE, Zinc plated                               | N/A              |                           | 4 |

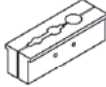
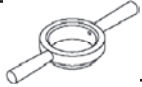
\* Values in mm, Length (L) is +/- 2mm, Height (H) is +/- 1mm, Width (W). \*\* Hardware kits 97501470 and 81 are also available for sale.

| Baseplate Kit      |                                                             |                  |                           |   |
|--------------------|-------------------------------------------------------------|------------------|---------------------------|---|
| 148 213TC for GA   |                                                             | Kit No. 97534520 |                           |   |
| XLBP2 213TC for GA |                                                             | Kit No. 97573875 |                           |   |
| Pos. No.           | Description                                                 | Material No.     | Qty. Included in each Kit |   |
| 90                 | Baseplate Cpl. 148, L=1219" x W=381" x H=107.9"             | 96956346         | 1                         |   |
|                    | Baseplate Cpl. XLBP2, L=1777.8" x W=381" x H=107.9"         | 96956377         |                           | 1 |
| N/A                | Slider & fastners for 213TC (consists of slider & hardware) | 96983859         | 1                         | 1 |
| N/A                | Hardware Kit -96983859 (consists of pos.56f, g, 90a,d& f)** | 97501482         | 1                         | 1 |
| 56f                | Bolt, Hex Head 1/2 -13 UNC x 1.25" SAE 5, Zinc plated       | N/A              | 2                         | 2 |
| 56g                | Washer, 1/2" SAE, Zinc plated                               | N/A              | 2                         | 2 |
| 90a                | Bolt, Hex Head 3/8 -16 UNC x 5/8" SAE 5, Zinc plated        | N/A              | 4                         | 4 |
| 90b                | Slider, GA/B/C 213TC/148BP, L=252" x H=20" x W=25.4"        | 96956347         | 2                         | 2 |
| 90d                | Bolt, Hex Head 1/4 -20 UNC x 1.75" SAE 5, Zinc plated       | N/A              | 4                         | 4 |
| 90f                | Washer, 3/8" SAE, Zinc plated                               | N/A              | 4                         | 4 |

\* Values in mm, Length (L) is +/- 2mm, Height (H) is +/- 1mm, Width (W). \*\* Hardware kits 97501482 is also available for sale.

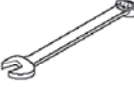
## Special Tools

Tools not generally available from normal sources.

| Mat. No. | Description and Use                                                                                                           |                                                                                     |
|----------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 00SV0040 | <b>Shaft Holder for Dismantling/Assembly</b><br>Used to hold and protect the shaft during dismantling and assembly.           |  |
| 00SV2007 | <b>Tubular Box Spanner for Shaft Seal 36.1 mm</b><br>Used to install and remove the shaft seal.<br>Fits a 1/2" drive ratchet. |    |
| 00SV0239 | <b>Puller for Neck Ring</b><br>Used to remove the Neck Ring from Chamber.                                                     |  |
| 00SV2014 | <b>Circlip Pliers for Flange Lock Ring</b><br>Used to remove the Lock Ring for the Flange.                                    |    |
| 00SV2066 | <b>Tool for Outer Sleeve</b><br>Used to press sleeve into base. (optional)                                                    |  |
| 00SV2011 | <b>Bit Holder</b><br>Used with Bits Kit, 1/4"                                                                                 |    |
| 00SV2010 | <b>Bits Kit</b><br>NV 5 mm for M6, 1/4"<br>NV 6 mm for M8, 1/4"<br>NV 8 mm for M10, 1/4"                                      |   |
| 00SV2012 | <b>Hexagon Socket Bit</b><br>Used for Shaft Seal<br>NV 2.5 mm for M5, 1/4"                                                    |   |

## Standard Tools

In addition to being available from Grundfos, comparable tools can be purchased through normal sources.

| Mat. No.                                                 | Description and Use                                                                                                                                |                                                                                       |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 00SV0083<br>00SV0055<br>00SV0056<br>00SV0054<br>00SV0122 | <b>Wrenches</b><br>Used to tighten various nuts.<br>NV 10 mm for M6<br>NV 13 mm for M8<br>NV 17 mm for M10<br>NV 19 mm for M12<br>NV 24 mm for M16 |    |
| 00SV0292<br>00SV0269<br>00SV0400                         | <b>Torque Wrench</b><br>Used to torque various screws.<br>4-20 Nm, 9 x 12<br>20-100 Nm, 9 x 12<br>40-200 Nm, 14x18                                 |   |
| 00SV0438                                                 | <b>Torque Screwdriver</b><br>Used to tighten various nuts.<br>1-6 Nm, 1/4"                                                                         |    |
| 00SV0295                                                 | <b>Ratchet Spanner for all Adapters</b><br>9 mm x 12 mm, 1/2"                                                                                      |  |
| 00SV0296<br>00SV0297<br>00SV0298                         | <b>Socket Spanner with Inside Hex</b><br>NV 5 mm for M6, 1/2" x 1/2"<br>NV 6 mm for M8, 1/2" x 1/2"<br>NV 8 mm for M10, 1/2" x 1/2"                |    |
| 00SV0310<br>00SV0294<br>00SV0270<br>00SV0271<br>00SV0524 | <b>Ring Spanner</b><br>NV 10 mm for M6<br>NV 13 mm for M8<br>NV 17 mm for M10<br>NV 19 mm for M12<br>NV 24 mm for M16                              |    |
| 00SV2013                                                 | <b>Socket Spanner</b><br>NV 13 mm for M8, 9 x 12                                                                                                   |    |

be think innovate

Being responsible is our foundation  
Thinking ahead makes it possible  
Innovation is the essence



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