

## Parts List & Kits

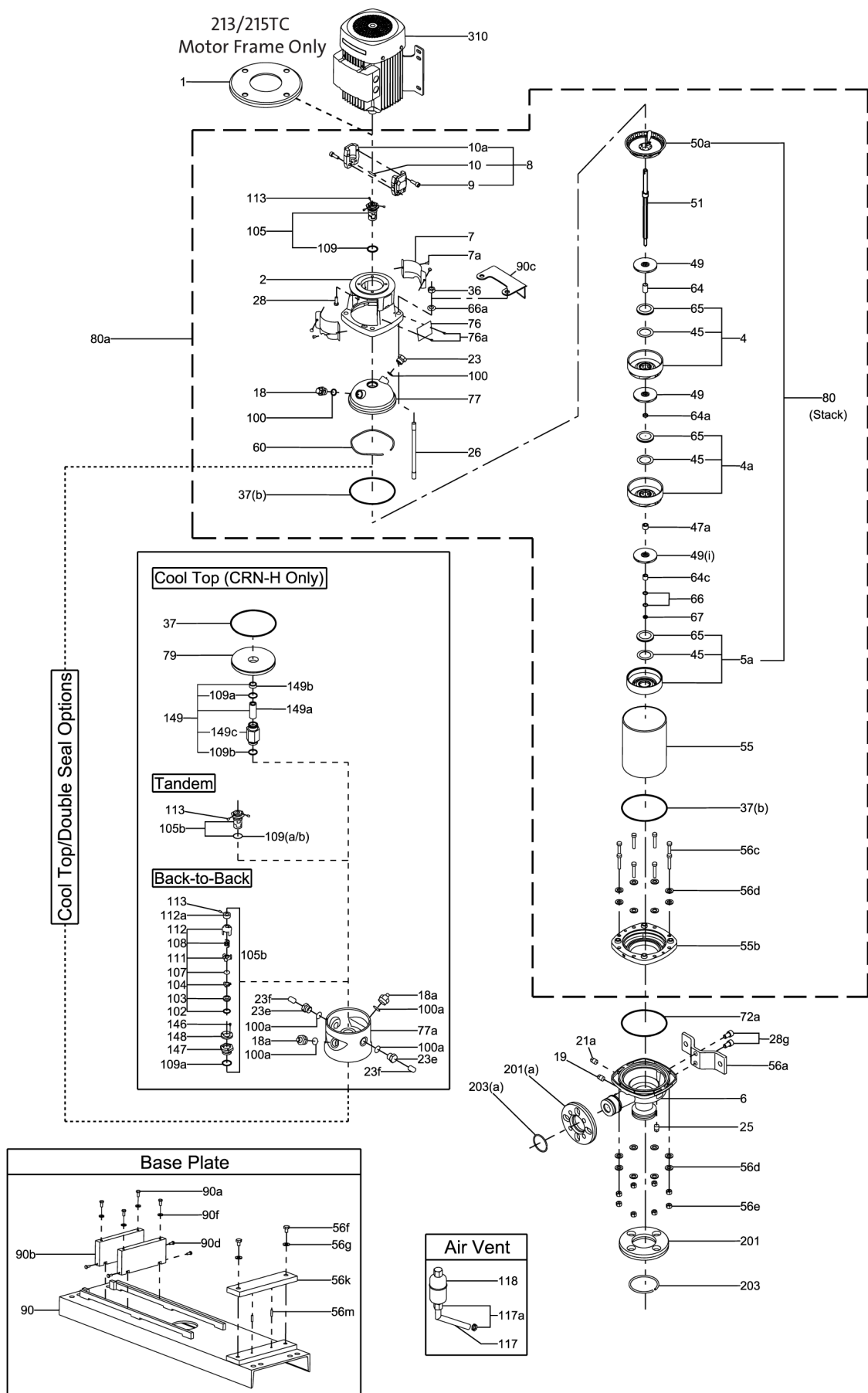
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### Contents

Parts List  
Spare Part Kits  
Accessories  
Special Tools  
Standard Tools  
Tools for Torques



Exploded View CRN1s-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> |                                                            |       |        |             |                                              |                    |                 |                       |
| 2                 | Motor Stool-Cat. Cast Iron, w/o insert Pos. 77             |       | 3/2-27 | 1           | NEMA, 56C, 1/3 - 2HP                         | 96436510           |                 | No                    |
|                   |                                                            |       |        | 1           | NEMA, 182/184TC, 3 - 5HP                     | 96436511           |                 | No                    |
|                   | Motor Stool-Stainless Option for GI - w/o Pos. 77          |       | 3/2-27 | 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 | ^^^         | PTFE Pos. 45                                 | 96439481           | 97690021        | No                    |
| 4a                | Chamber Cpl. w/Pos. 45 & 65 & Bearing                      |       | 3/2-36 | ^^^         | PTFE Pos. 45, (97690021 is a qty. of 5)      | 96439482           |                 | No                    |
|                   | Chamber Cpl. w/Pos. 45 & 65 & Brg. (option)                |       | 3/2-36 | ^^^         | Silicon Carbide Bearing, PTFE Pos. 45        | 96439476           |                 | YES                   |
| 5a                | Chamber, Bottom Complete with Pos. 45 & 65                 |       | 3/2-36 | ^^^         | Graflon Bearing, PTFE Pos. 45                | 96440615           |                 | YES                   |
| 6                 | Volute                                                     |       | 3/2-36 | 1*          | PTFE Pos. 45                                 | 96439485           | 96588149        | No                    |
| 7                 | Coupling Guard                                             |       | 3/2-27 | 1           | GA, Stainless Steel                          | 95922064           |                 | No                    |
| 7a                | Screw for Coupling Guard                                   |       | 3/2-36 | 2           | NEMA-56C                                     | 96438137           |                 | No                    |
|                   |                                                            |       |        | 2           | NEMA, 182-215TC                              | 96438138           |                 | No                    |
| 9                 | Allen Screw                                                |       | 3/2-27 | 4           | Screw comb. slot torx/straight slot 4 x 8mm  | 96488481           |                 | No                    |
| 10                | Shaft Pin                                                  |       | 3/2-36 | 4           | M6 x 20mm, Delta Tone/Seal                   | 001D7899           |                 | YES                   |
|                   |                                                            |       |        | 4           | M8 x 25mm, Delta Tone/Seal                   | 001D7900           |                 | YES                   |
| 10a               | Coupling Half                                              |       | 3/2-36 | 1           | ø5 x 26mm                                    | 310192             |                 | YES                   |
|                   |                                                            |       | 3/2-27 | 2           | NEMA, 56C, 1/3 - 2HP. ø15.8 / ø12            | 410108             |                 | YES                   |
|                   |                                                            |       |        | 1           | NEMA, 143/5TC, 1/3-3HP. ø22.225 / ø12 (Mach) | 97851501           |                 | YES                   |
|                   |                                                            |       |        | 2           | NEMA, 182/184TC, 3-5HP. ø28.5 / ø12          | 410109             |                 | YES                   |
| 18(a)             | Priming/Vent Plug                                          |       | 3/2-36 | *           | G 1/2A, NV24 with NV9 x M8 stem              | 405150             | 95061351        | No                    |
| 19(a)             | Pipe Plug                                                  |       | 3/2-36 | **          | 1/4" NPT,SS SQHD, with Loctite               | 91136507           | 95061733        | No                    |
| 21a               | Pipe Plug                                                  |       | 3/2-36 | **          | 1/4" NPT,SS SQHD, with Loctite               | 91136507           |                 | No                    |
| 23(c)             | Plug                                                       |       | 3/2-36 | **          | G 1/2A, Solid no port, NV24                  | 370025             |                 | No                    |
| 23a, e            | Plug (option)                                              |       | 3/2-36 | **          | G 1/2A, w/1/4" port, NV24                    | 91120659           |                 | No                    |
| 23b, f            | Pipe Plug for Pos. 23a, 23e                                |       | 3/2-36 | **          | 1/4" NPT,SS SQHD, with Loctite               | 91136507           |                 | No                    |
| 23d               | Plug, Vented for Pos. 77a Cool Top® option only            |       | 3/2-36 | 2           | G 1/2A, NV24, Vented                         | 96510323           |                 | No                    |
| 25                | Drain Plug                                                 |       | 3/2-36 | 1           | 1/4" NPT,SS SQHD, with Loctite               | 91136507           |                 | No                    |
| 26                | Staybolt                                                   |       | 3/2-3  | 4           | M12, ø10,7 x 69mm                            | 97683238           |                 | No                    |
|                   |                                                            |       | 4      | 4           | M12, ø10,7 x 87mm                            | 97683239           |                 | No                    |
|                   |                                                            |       | 5      | 4           | M12, ø10,7 x 106mm                           | 97683241           |                 | No                    |
|                   |                                                            |       | 6      | 4           | M12, ø10,7 x 123mm                           | 97683242           |                 | No                    |
|                   |                                                            |       | 7      | 4           | M12, ø10,7 x 141mm                           | 97683243           |                 | No                    |
|                   |                                                            |       | 8      | 4           | M12, ø10,7 x 160mm                           | 97683245           |                 | No                    |
|                   |                                                            |       | 9      | 4           | M12, ø10,7 x 177mm                           | 97683246           |                 | No                    |
|                   |                                                            |       | 10     | 4           | M12, ø10,7 x 195mm                           | 97683247           |                 | No                    |
|                   |                                                            |       | 11     | 4           | M12, ø10,7 x 214mm                           | 97683250           |                 | No                    |
|                   |                                                            |       | 12     | 4           | M12, ø10,7 x 231mm                           | 97683251           |                 | No                    |
|                   |                                                            |       | 13     | 4           | M12, ø10,7 x 249mm                           | 97683252           |                 | No                    |
|                   |                                                            |       | 15     | 4           | M12, ø10,7 x 285mm                           | 97683255           |                 | No                    |
|                   |                                                            |       | 17     | 4           | M12, ø10,7 x 322mm                           | 97683258           |                 | No                    |
|                   |                                                            |       | 19     | 4           | M12, ø10,7 x 357mm                           | 97683260           |                 | No                    |
|                   |                                                            |       | 21     | 4           | M12, ø10,7 x 393mm                           | 97683262           |                 | No                    |
|                   |                                                            |       | 23     | 4           | M12, ø10,7 x 430mm                           | 97683264           |                 | No                    |
|                   |                                                            |       | 25     | 4           | M12, ø10,7 x 465mm                           | 97683266           |                 | No                    |
|                   |                                                            |       | 27     | 4           | M12, ø10,7 x 501mm                           | 97683268           |                 | No                    |
|                   |                                                            |       | 30     | 4           | M12, ø10,7 x 555mm, 4 pole & 50 Hz.          | 97683271           |                 | No                    |
|                   |                                                            |       | 33     | 4           | M12, ø10,7 x 609mm, 4 pole & 50 Hz.          | 97683273           |                 | No                    |
|                   |                                                            |       | 36     | 4           | M12, ø10,7 x 663mm, 4 pole & 50 Hz.          | 97683274           |                 | No                    |
|                   | Staybolt<br>(Cool Top®, Back-to-Back & Tandem Seal Option) |       | 3/2-3  | 4           | M12, ø10,7 x 177mm                           | 97683246           |                 | No                    |
|                   |                                                            |       | 4      | 4           | M12, ø10,7 x 195mm                           | 97683247           |                 | No                    |
|                   |                                                            |       | 5      | 4           | M12, ø10,7 x 214mm                           | 97683250           |                 | No                    |
|                   |                                                            |       | 6      | 4           | M12, ø10,7 x 231mm                           | 97683251           |                 | No                    |
|                   |                                                            |       | 7      | 4           | M12, ø10,7 x 249mm                           | 97683252           |                 | No                    |
|                   |                                                            |       | 8      | 4           | M12, ø10,7 x 267mm                           | 97683254           |                 | No                    |
|                   |                                                            |       | 9      | 4           | M12, ø10,7 x 285mm                           | 97683255           |                 | No                    |
|                   |                                                            |       | 10     | 4           | M12, ø10,7 x 303mm                           | 97683256           |                 | No                    |
|                   |                                                            |       | 11     | 4           | M12, ø10,7 x 322mm                           | 97683258           |                 | No                    |
|                   |                                                            |       | 12     | 4           | M12, ø10,7 x 339mm                           | 97683259           |                 | No                    |
|                   |                                                            |       | 13     | 4           | M12, ø10,7 x 357mm                           | 97683260           |                 | No                    |
|                   |                                                            |       | 15     | 4           | M12, ø10,7 x 393mm                           | 97683262           |                 | No                    |
|                   |                                                            |       | 17     | 4           | M12, ø10,7 x 430mm                           | 97683264           |                 | No                    |
|                   |                                                            |       | 19     | 4           | M12, ø10,7 x 465mm                           | 97683266           |                 | No                    |
|                   |                                                            |       | 21     | 4           | M12, ø10,7 x 501mm                           | 97683268           |                 | No                    |
|                   |                                                            |       | 23     | 4           | M12, ø10,7 x 537mm                           | 97683270           |                 | No                    |
|                   |                                                            |       | 25     | 4           | M12, ø10,7 x 573mm                           | 97683272           |                 | No                    |
|                   |                                                            |       | 27     | 4           | M12, ø10,7 x 609mm                           | 97683273           |                 | No                    |
|                   |                                                            |       | 30     | 4           | M12, ø10,7 x 663mm, 4 pole & 50 Hz.          | 97683274           |                 | 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                    |

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# Parts List & Kits CRN1s-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                                                    |       | 3/2-27 | 4        | NEMA, 56C, 1/3 - 2HP. UNC 3/8" x 25mm     | 00ID1839        |              | No                 |
|                   |                                                               |       |        | 4        | NEMA, 182/184TC, 3 - 5HP.UNC1/2" x 25mm   | 00ID1840        |              | No                 |
| 28g               | Bolt for foot Pos. 56a                                        |       | 3/2-36 | 2        | M12 x 1.75 x 20mm, 316SS, Delta Tone/Seal | 97672732        |              | No                 |
| 36                | Staybolt Nut                                                  |       | 3/2-36 | 4        | 19mm x M12, 316SS                         | 00ID0876        |              | No                 |
| 37                | Sleeve O-ring                                                 |       | 3/2-36 | ◆◆       | EPDM, ø137.5 x 3.3mm                      | 96438743        |              | YES                |
|                   | Sleeve O-ring                                                 |       | 3/2-36 | ◆◆       | FKM, ø137.5 x 3.3mm                       | 96438744        |              | YES                |
| 37b               | Sleeve O-ring (option)                                        |       | 3/2-36 | ◆◆       | FKM, ø137.5 x 3.3mm                       | 96458109        |              | YES                |
|                   |                                                               |       | 3/2-36 | ◆◆       | FFKM, ø136.12 x 3.53mm                    | 96466718        |              | YES                |
| 45                | Neck Ring                                                     |       | 3/2-36 | # stgs   | ø41.3 x ø30.6 x .75mm, PTFE               | 400003          |              | YES                |
| 47a               | Bearing Ring/Spacer                                           |       | 3/2-36 | ^^^^     | SiC 150, ø17.37 x ø13.10 x ø10.9 x 13mm   | 96437488        |              | YES                |
|                   | Brg. Ring/Spacer (option for Graflon Pos. 4a)                 |       | 3/2-36 | ^^^^     | TC, ø15.92 x ø13.10 x ø10.9 x 9.7mm       | 400041          |              | YES                |
| 49                | Impeller                                                      |       | 3/2-36 | # stgs   | ø73.0 x ø30.6 x 9.0mm (back-plate .5mm)   | 96433166        |              | No                 |
| 50a               | Top Guide Vane                                                |       | 3-36   | 1        |                                           | 96457638        |              | No                 |
|                   | Top Guide Vane Plate (option for destaging)                   |       | 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                             | 96440406        |              | No                 |
|                   |                                                               |       | 30     | 1        | ø12 x 646.5mm, 4 pole & 50 Hz.            | 96440408        |              | 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                 |
|                   | Shaft, Cpl.<br>(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                             | 96457581        |              | No                 |
|                   |                                                               |       | 30     | 1        | ø12 x 751.5mm, 4 pole & 50 Hz.            | 96457583        |              | 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                 |
|                   |                                                               |       | 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                 |

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|-------------------|------------------------------------------------------|-----------|--------|----------|------------------------------------------------|-----------------|--------------|--------------------|
| <b>PARTS LIST</b> |                                                      |           |        |          |                                                |                 |              |                    |
| 55                | Outer Sleeve <i>(continued)</i>                      |           | 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                                 | 96440021        |              | No                 |
|                   |                                                      |           | 30     | 1        | ø138 x 530.6mm, 4 pole & 50 Hz.                | 96440022        |              | 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, Cl.     | 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 ø8.4 x 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        | 95061339     | No                 |
| 64                | Spacing Pipe                                         |           | 2-36   | ^^^      | ø15.85 x ø12.85 x 17.52mm                      | 400035          |              | No                 |
| 64a               | Spacing Pipe                                         |           | 3/2-36 | ^^^^     | ø15.85 x ø12.85 x 4.5mm                        | 96440292        |              | YES                |
|                   | Spacing Pipe (option for Grafion 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             | 001D3103        |              | No                 |
| 67                | Lock Nut for Shaft                                   |           | 3/2-36 | 1        | 13mm x M8                                      | 001D2061        |              | 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                |
|                   | Sleeve Flange O-ring (option)                        |           | 3/2-36 | 1        | FKM, ø137.5 x 3.3mm                            | 96438744        | 97683278     | YES                |
|                   |                                                      |           | 3/2-36 | 1        | FKM, 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 & Tand. 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        | 3/2-21 | 1        | BP. Cpl. 139, L=991mm x W=305mm x H=106.5mm    | 96956336        |              | YES                |
|                   | Main Support Baseplate - Longer versions             | GA        | 23-36  | 1        | XLBP1 (139), L=1500mm x W=381mm x H=106.5mm    | 96956376        |              | YES                |
| 90a               | Bolt for motor to slider Pos. 90b                    | 56C       | 3/2-36 | 4        | Hex Head 5/16-18 UNC x .75" SAE 5, Zinc plated |                 |              | YES                |
| 90b               | Motor support /slide rail                            | 56C       | 3/2-36 | 2        | BP139, L=204mm x H=45.5mm x W=25.4mm           | 96956339        |              | 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   |           | 3/2-36 | 4        | Hex Head 1/4 -20 UNC x 1" SAE 5, Zinc plated   |                 |              | YES                |
| 90f               | Washer for mtr. bolt Pos. 90a to slide rail Pos. 90b |           | 3/2-36 | 4        | 5/16" SAE, Zinc plated                         |                 |              | YES                |
| 100               | Priming/Vent Plug O-ring                             |           | 3/2-36 | ■        | EPDM, ø16.3 x 2.4mm                            | 001D1288        |              | YES                |
|                   |                                                      |           | 3/2-36 | ■        | FKM, ø16.3 x 2.4mm                             | 001D2231        |              | YES                |
| 100(a)            | Priming/Vent Plug O-ring (option)                    |           | 3/2-36 | ■        | FFKM, ø16.3 x 2.4mm                            | 96428162        |              | YES                |
|                   |                                                      |           | 3/2-36 | ■        | FKM, 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                              | 001D2041        |              | YES                |
|                   |                                                      |           | 3/2-36 | 1        | FKM, ø17.86 x 2.62mm                           | 001D2187        |              | 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        | FKM, ø17.86 x 2.62mm                           | 96472584        |              | No                 |
| 103               | Stnry Seal Ring for Pos. 105b Back-to-Back           |           | 3/2-36 | 1        | TC, 12mm                                       | 980190          |              | No                 |
|                   | Stnry Seal Ring for Pos. 105b Back-to-Back (opt.)    |           | 3/2-36 | 1        | SiC, 12mm                                      | 980746          |              | YES                |
| 104               | Rotating Seal Ring for Pos. 105b Back-to-Back        |           | 3/2-36 | 1        | TC, 12mm                                       | 980163          |              | No                 |
|                   | Rotating Seal Ring for Pos. 105b Back-to-Back (opt.) |           | 3/2-36 | 1        | SiC, 12mm                                      | 980733          |              | YES                |
| 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                |

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

This column indicates which model uses the spare part. If blank, the part is used in all models.

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# Parts List & Kits CRN1s-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> |                                                    |       |        |          |                                                  |                 |              |                    |
| 105(b)            | 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 109a&b and 149a&b             |       | 3/2-36 | 1        | NV36, 316SS                                      | 96456295        |              | YES                |
| 201               | Flange, Suction, Cast Iron                         |       | 3/2-17 | 1        | 1.5" 150#, 4x1/2"-13 UNC threaded flg., e-coat   | 96922828        |              | No                 |
|                   |                                                    |       | 3/2-36 | 1        | 1.5" 300#, 4 x 3/4"-10 UNC threaded flg., e-coat | 96956145        |              | No                 |
|                   | Flange, Suction, Stainless Steel option for GI     |       | 3/2-17 | 1        | 1.5" 150#, 4 x 1/2"-13 UNC threaded flange       | 97644306        |              | No                 |
|                   |                                                    |       | 3/2-36 | 1        | 1.5" 300#, 4 x 3/4"-10 UNC threaded flange       | 97644307        |              | No                 |
| 201a              | Flange, Discharge, Cast Iron                       |       | 3/2-17 | 1        | 1" 150#, 4 x 1/2"-13 UNC threaded flg., e-coat   | 96922827        |              | No                 |
|                   |                                                    |       | 3/2-36 | 1        | 1" 300#, 4 x 5/8"-11 UNC threaded flg., e-coat   | 96956144        |              | No                 |
|                   | Flange, Discharge, Stainless Steel option for GI   |       | 3/2-17 | 1        | 1" 150#, 4 x 1/2"-13 UNC threaded flange         | 97644302        |              | No                 |
|                   |                                                    |       | 3/2-36 | 1        | 1" 300#, 4 x 3/4"-10 UNC threaded flange         | 97644304        |              | No                 |
| 203               | Retaining ring for Pos. 201, 1.5" flange           |       | 3/2-36 | 1        | Stainless, ø72.6 x 5                             | 96475395        |              | No                 |
| 203a              | Retaining ring for Pos. 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 on next page...

## Notes:

The first number is total number of impellers. An exception to this format is the CRN1s-2H.

**Example:** a CRN1s-2H is actually a CRN1s-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:

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

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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)1S, 1, & 3 SiC Bearing |                                              | Kit No.      |                           | 96455095 |    |    |  |
|--------------------------------|----------------------------------------------|--------------|---------------------------|----------|----|----|--|
| WEAR PARTS KIT 2-9             |                                              | Kit No.      |                           | 96455092 |    |    |  |
| WEAR PARTS KIT 10-19           |                                              | Kit No.      |                           | 96455093 |    |    |  |
| WEAR PARTS KIT 20-27           |                                              | Kit No.      |                           | 96455094 |    |    |  |
| 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  |  |

| STACK KITS   |              |
|--------------|--------------|
| Model        | Material No. |
| CRN1S-3/2    | 96479078     |
| CRN1S-3      | 96479079     |
| CRN1S-4      | 96479080     |
| CRN1S-5      | 96479081     |
| CRN1S-6      | 96479082     |
| CRN1S-7      | 96479083     |
| CRN1S-8      | 96479084     |
| CRN1S-9      | 96479085     |
| CRN1S-10     | 96479086     |
| CRN1S-11     | 96479087     |
| CRN1S-12     | 96479088     |
| CRN1S-13     | 96479089     |
| CRN1S-15     | 96479090     |
| CRN1S-17     | 96479091     |
| CRN1S-19     | 96479092     |
| CRN1S-21     | 96479093     |
| CRN1S-23     | 96479094     |
| CRN1S-25     | 96479095     |
| CRN1S-27     | 96479096     |
| *** CRN1S-30 | 96479097     |
| *** CRN1S-33 | 96479098     |
| *** CRN1S-36 | 96479099     |

\*\*\*For 4 pole & 50 Hz operation only.

| CR(I, N)1S, 1, & 3 Graflon Bearing |                                              | Kit No.      |                           | 96460140 |    |    |  |
|------------------------------------|----------------------------------------------|--------------|---------------------------|----------|----|----|--|
| WEAR PARTS KIT 2-9                 |                                              | Kit No.      |                           | 96455110 |    |    |  |
| WEAR PARTS KIT 10-19               |                                              | Kit No.      |                           | 96455111 |    |    |  |
| WEAR PARTS KIT 20-27               |                                              | Kit No.      |                           | 96455112 |    |    |  |
| 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<br>(Maximum allowed working PSI is 435)<br>(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 |
| N/A                                                                                                                                          | Emery Cloth | 370712                               | 1                         | 1 | 1 | 1 | 1 | 1 | 1 |

|                                                                                                                                              |                                      |              |                           |   |   |   |   |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------|---------------------------|---|---|---|---|---|---|
| OPTIONAL SHAFT SEAL KIT, BALANCED CARTRIDGE<br>(Maximum allowed working PSI is 435)<br>(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 |
|                                                                                                                                              | HUUV                                 | 96441876     |                           |   |   |   |   |   | 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 OUUE/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 |   |
| 108                                                                                    | 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 |   |
| 111                                                                                    | 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 | 1 |
| 113                                                                                    | 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 | 1 |
| N/A                                                                                    | Emery Cloth                                        | 370712       |                           |   | 1 | 1 |

| <b>GASKET KIT (EPDM)</b>                            |                                                    | <b>Kit No.</b> | <b>96455090</b>           |   |   |   |
|-----------------------------------------------------|----------------------------------------------------|----------------|---------------------------|---|---|---|
| <b>GASKET KIT (FKM)</b>                             |                                                    | <b>Kit No.</b> | <b>96455091</b>           |   |   |   |
| <b>GASKET KIT (FKM)</b>                             |                                                    | <b>Kit No.</b> | <b>96463944</b>           |   |   |   |
| <b>GASKET KIT (FFKM)</b>                            |                                                    | <b>Kit No.</b> | <b>96533328</b>           |   |   |   |
| <b>GASKET KIT (EPDM)-Double Seal option.</b>        |                                                    | <b>Kit No.</b> | <b>96533362</b>           |   |   |   |
| <b>GASKET KIT (FKM)-Double Seal option.</b>         |                                                    | <b>Kit No.</b> | <b>96533363</b>           |   |   |   |
| <b>GASKET KIT (FFKM)-Double Seal option.</b>        |                                                    | <b>Kit No.</b> | <b>96533364</b>           |   |   |   |
| <b>GASKET KIT (FKM, &amp; EPDM)-Cool-Top option</b> |                                                    | <b>Kit No.</b> | <b>96533329</b>           |   |   |   |
| Pos. No.                                            | Description                                        | Material No.   | Qty. Included in each Kit |   |   |   |
| 37                                                  | Sleeve O-ring, EPDM, Ø137.5 x 3.3mm                | 96438743       | 2                         |   |   | 3 |
|                                                     | Sleeve O-ring, FKM, Ø137.5 x 3.3mm                 | 96438744       |                           | 2 |   | 3 |
| 37b                                                 | Sleeve O-ring, FKM, Ø137.5 x 3.3mm                 | 96458109       |                           |   | 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 |
|                                                     | Drain Plug O-ring, FKM, Ø16.3 x 2.4mm              | 00ID2231       |                           | 3 |   | 7 |
| 38, 100a                                            | Drain Plug O-ring, FKM, Ø16.3 x 2.4mm              | 96442869       |                           |   | 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, FKM, Ø22.0 x 2.75mm   | 96458111       |                           |   | 1 |   |
|                                                     | O-ring for Pos.105(b) & 149, FFKM, Ø23.47 x 2.62mm | 96464384       |                           |   | 1 |   |

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

| <b>Kit, O-ring EPDM CRN-H1s to 5</b> |                                | <b>Kit No.</b> | <b>97683277</b>           |   |   |   |
|--------------------------------------|--------------------------------|----------------|---------------------------|---|---|---|
| <b>Kit, O-ring FKM CRN-H1s to 5</b>  |                                | <b>Kit No.</b> | <b>97683278</b>           |   |   |   |
| <b>Kit, O-ring FKM CRN-H1s to 5</b>  |                                | <b>Kit No.</b> | <b>97683279</b>           |   |   |   |
| <b>Kit, O-ring FFKM CRN-H1s to 5</b> |                                | <b>Kit No.</b> | <b>97683280</b>           |   |   |   |
| 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 FKM Ø145.6x3.5 2-256    | 97672716       |                           |   | 1 |   |
|                                      | O-ring FFKM Ø145.6x3.5mm 2-256 | 97672717       |                           |   |   | 1 |

| <b>NEMA COUPLING KIT</b> |                                            | <b>Kit No.</b> | <b>415314</b>             |   |   |  |
|--------------------------|--------------------------------------------|----------------|---------------------------|---|---|--|
| <b>Ø15.8/Ø12</b>         |                                            | <b>Kit No.</b> | <b>415315</b>             |   |   |  |
| <b>Ø28.5/Ø12</b>         |                                            | <b>Kit No.</b> | <b>96478700</b>           |   |   |  |
| <b>Ø34.9/Ø12</b>         |                                            | <b>Kit No.</b> |                           |   |   |  |
| 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-SHP, Ø28.5/Ø12 | 410109         |                           | 2 |   |  |
|                          | Coupling Half, 213TC, 7.5-10HP, Ø34.9/Ø12  | 96472175       |                           |   | 2 |  |

## 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<br>(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, FXM, 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 |

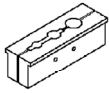
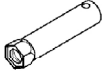
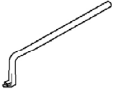
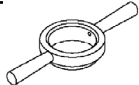
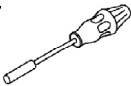
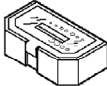
| ANSI COMPANION FLANGES FOR SMALL CR<br>1-1/2" and 1" Threaded Stainless, 300 Lb. Class |                                               |                  |                           |   |
|----------------------------------------------------------------------------------------|-----------------------------------------------|------------------|---------------------------|---|
|                                                                                        |                                               | 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.

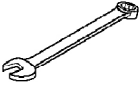
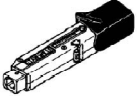
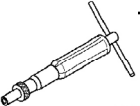
## Special Tools

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                                                                                                   |    |

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