

**S Series - SHA 1in to 6in All-In-One Solution**

| Series    | Continuous Duty @ 230Vac |                 | Peak @ 230Vac    |                 | Series    | Continuous Duty @ 230Vac |                 | Peak @ 230Vac    |                 |
|-----------|--------------------------|-----------------|------------------|-----------------|-----------|--------------------------|-----------------|------------------|-----------------|
|           | Force-Lbf (N)            | Avg-In/s (mm/s) | Force-Lbf (N)    | Avg-In/s (mm/s) |           | Force-Lbf (N)            | Avg-In/s (mm/s) | Force-Lbf (N)    | Avg-In/s (mm/s) |
| S08C10-02 | 2,356 (10,481)           | 1.0 (4.3)       | 2,356 (10,481)   | 1.0 (4.3)       | S12C10-23 | 1,842 (8,191)            | 14.8 (65.7)     | 2,356 (10,481)   | 14.8 (65.7)     |
| S08C15-02 | 5,301 (23,582)           | 0.4 (1.6)       | 5,301 (23,582)   | 0.4 (1.6)       | S12C50-23 | 4,143 (18,431)           | 5.5 (24.4)      | 5,301 (23,582)   | 5.5 (24.4)      |
| S08C20-02 | 9,425 (41,924)           | 0.2 (0.9)       | 9,425 (41,924)   | 0.2 (0.9)       | S12C20-23 | 7,366 (32,766)           | 3.3 (14.5)      | 9,425 (41,924)   | 3.3 (14.5)      |
| S08C25-02 | 14,726 (65,505)          | 0.1 (0.6)       | 14,726 (65,505)  | 0.1 (0.6)       | S12C25-23 | 11,509 (51,197)          | 2.2 (9.7)       | 14,726 (65,505)  | 2.2 (9.7)       |
| S08C32-02 | 24,887 (110,704)         | 0.1 (0.3)       | 24,887 (110,704) | 0.1 (0.3)       | S12C30-23 | 19,451 (86,523)          | 1.2 (5.2)       | 24,887 (110,704) | 1.2 (5.2)       |
| S08C40-02 | 37,699 (167,694)         | 0.1 (0.2)       | 37,699 (167,694) | 0.1 (0.2)       | S12C40-23 | 29,464 (131,064)         | 0.8 (3.6)       | 37,699 (167,694) | 0.8 (3.6)       |
| S08C50-02 | 58,905 (262,022)         | 0.0 (0.2)       | 58,905 (262,022) | 0.0 (0.2)       | S12C50-23 | 46,038 (204,787)         | 0.6 (2.6)       | 58,905 (262,022) | 0.6 (2.6)       |
| S08C60-02 | 84,823 (377,312)         | 0.0 (0.1)       | 84,823 (377,312) | 0.0 (0.1)       | S12C60-23 | 66,295 (294,894)         | 0.4 (1.7)       | 84,823 (377,312) | 0.4 (1.7)       |
| S08C10-05 | 2,356 (10,481)           | 2.2 (9.8)       | 2,356 (10,481)   | 2.2 (9.8)       | S12C10-27 | 1,370 (6,096)            | 19.9 (88.3)     | 2,356 (10,481)   | 19.9 (88.3)     |
| S08C15-05 | 5,301 (23,582)           | 0.8 (3.6)       | 5,301 (23,582)   | 0.8 (3.6)       | S12C15-27 | 3,083 (13,716)           | 7.4 (32.8)      | 5,301 (23,582)   | 7.4 (32.8)      |
| S08C20-05 | 9,425 (41,924)           | 0.5 (2.2)       | 9,425 (41,924)   | 0.5 (2.2)       | S12C20-27 | 5,482 (24,384)           | 4.4 (19.5)      | 9,425 (41,924)   | 4.4 (19.5)      |
| S08C25-05 | 14,726 (65,505)          | 0.3 (1.4)       | 14,726 (65,505)  | 0.3 (1.4)       | S12C25-27 | 8,565 (38,100)           | 2.9 (13.0)      | 14,726 (65,505)  | 2.9 (13.0)      |
| S08C32-05 | 24,887 (110,704)         | 0.2 (0.8)       | 24,887 (110,704) | 0.2 (0.8)       | S12C32-27 | 14,475 (64,389)          | 1.6 (7.0)       | 24,887 (110,704) | 1.6 (7.0)       |
| S08C40-05 | 37,699 (167,694)         | 0.1 (0.5)       | 37,699 (167,694) | 0.1 (0.5)       | S12C40-27 | 21,927 (97,536)          | 1.1 (4.9)       | 37,699 (167,694) | 1.1 (4.9)       |
| S08C50-05 | 58,905 (262,022)         | 0.1 (0.4)       | 58,905 (262,022) | 0.1 (0.4)       | S12C50-27 | 34,261 (152,400)         | 0.8 (3.4)       | 58,905 (262,022) | 0.8 (3.4)       |
| S08C60-05 | 84,823 (377,312)         | 0.1 (0.2)       | 84,823 (377,312) | 0.1 (0.2)       | S12C60-27 | 49,336 (219,456)         | 0.5 (2.2)       | 84,823 (377,312) | 0.5 (2.2)       |
| S08C10-07 | 2,268 (10,089)           | 3.8 (16.8)      | 2,356 (10,481)   | 3.8 (16.8)      | S12C10-31 | 999 (4,443)              | 27.2 (121.2)    | 2,356 (10,481)   | 27.2 (121.2)    |
| S08C15-07 | 5,103 (22,700)           | 1.4 (6.2)       | 5,301 (23,582)   | 1.4 (6.2)       | S12C15-31 | 2,247 (9,996)            | 10.1 (45.1)     | 5,301 (23,582)   | 10.1 (45.1)     |
| S08C20-07 | 9,072 (40,356)           | 0.8 (3.7)       | 9,425 (41,924)   | 0.8 (3.7)       | S12C20-31 | 3,995 (17,771)           | 6.0 (26.8)      | 9,425 (41,924)   | 6.0 (26.8)      |
| S08C25-07 | 14,176 (63,057)          | 0.6 (2.5)       | 14,726 (65,505)  | 0.6 (2.5)       | S12C25-31 | 6,242 (27,768)           | 4.0 (17.9)      | 14,726 (65,505)  | 4.0 (17.9)      |
| S08C32-07 | 23,957 (106,566)         | 0.3 (1.3)       | 24,887 (110,704) | 0.3 (1.3)       | S12C32-31 | 10,550 (46,928)          | 2.2 (9.6)       | 24,887 (110,704) | 2.2 (9.6)       |
| S08C40-07 | 36,290 (161,425)         | 0.2 (0.9)       | 37,699 (167,694) | 0.2 (0.9)       | S12C40-31 | 15,981 (71,085)          | 1.5 (6.7)       | 37,699 (167,694) | 1.5 (6.7)       |
| S08C50-07 | 56,703 (252,226)         | 0.1 (0.7)       | 58,905 (262,022) | 0.1 (0.7)       | S12C50-31 | 24,970 (111,071)         | 1.1 (4.7)       | 58,905 (262,022) | 1.1 (4.7)       |
| S08C60-07 | 81,652 (363,206)         | 0.1 (0.4)       | 84,823 (377,312) | 0.1 (0.4)       | S12C60-31 | 35,956 (159,942)         | 0.7 (3.1)       | 84,823 (377,312) | 0.7 (3.1)       |
| S08C10-11 | 1,462 (6,505)            | 5.8 (26.0)      | 2,356 (10,481)   | 5.8 (26.0)      | S12C10-34 | 755 (3,361)              | 36.0 (160.2)    | 2,356 (10,481)   | 36.0 (160.2)    |
| S08C15-11 | 3,290 (14,636)           | 2.2 (9.7)       | 5,301 (23,582)   | 2.2 (9.7)       | S12C15-34 | 1,700 (7,561)            | 13.4 (59.6)     | 5,301 (23,582)   | 13.4 (59.6)     |
| S08C20-11 | 5,849 (26,019)           | 1.3 (5.7)       | 9,425 (41,924)   | 1.3 (5.7)       | S12C20-34 | 3,022 (13,442)           | 8.0 (35.4)      | 9,425 (41,924)   | 8.0 (35.4)      |
| S08C25-11 | 9,140 (40,655)           | 0.9 (3.8)       | 14,726 (65,505)  | 0.9 (3.8)       | S12C25-34 | 4,722 (21,004)           | 5.3 (23.6)      | 14,726 (65,505)  | 5.3 (23.6)      |
| S08C32-11 | 15,446 (68,707)          | 0.5 (2.1)       | 24,887 (110,704) | 0.5 (2.1)       | S12C32-34 | 7,980 (35,496)           | 2.9 (12.7)      | 24,887 (110,704) | 2.9 (12.7)      |
| S08C40-11 | 23,397 (104,077)         | 0.3 (1.4)       | 37,699 (167,694) | 0.3 (1.4)       | S12C40-34 | 12,088 (53,770)          | 2.0 (8.8)       | 37,699 (167,694) | 2.0 (8.8)       |
| S08C50-11 | 36,558 (162,620)         | 0.2 (1.0)       | 58,905 (262,022) | 0.2 (1.0)       | S12C50-34 | 18,887 (84,015)          | 1.4 (6.2)       | 58,905 (262,022) | 1.4 (6.2)       |
| S08C60-11 | 52,644 (234,172)         | 0.1 (0.7)       | 84,823 (377,312) | 0.1 (0.7)       | S12C60-34 | 27,198 (120,982)         | 0.9 (4.1)       | 84,823 (377,312) | 0.9 (4.1)       |
| S08C10-13 | 966 (4,299)              | 8.8 (39.4)      | 2,356 (10,481)   | 8.8 (39.4)      | S12C10-36 | 596 (2,653)              | 45.6 (202.9)    | 1,993 (8,867)    | 45.6 (202.9)    |
| S08C15-13 | 2,174 (9,672)            | 3.3 (14.6)      | 5,301 (23,582)   | 3.3 (14.6)      | S12C15-36 | 1,342 (5,970)            | 17.0 (75.5)     | 4,485 (19,951)   | 17.0 (75.5)     |
| S08C20-13 | 3,866 (17,195)           | 2.0 (8.7)       | 9,425 (41,924)   | 2.0 (8.7)       | S12C20-36 | 2,386 (10,612)           | 10.1 (44.8)     | 7,974 (35,468)   | 10.1 (44.8)     |
| S08C25-13 | 6,040 (26,868)           | 1.3 (5.8)       | 14,726 (65,505)  | 1.3 (5.8)       | S12C25-36 | 3,728 (16,582)           | 6.7 (29.9)      | 12,459 (55,419)  | 6.7 (29.9)      |
| S08C32-13 | 10,208 (45,406)          | 0.7 (3.1)       | 24,887 (110,704) | 0.7 (3.1)       | S12C32-36 | 6,300 (28,024)           | 3.6 (16.1)      | 21,055 (93,658)  | 3.6 (16.1)      |
| S08C40-13 | 15,463 (68,781)          | 0.5 (2.2)       | 37,699 (167,694) | 0.5 (2.2)       | S12C40-36 | 9,543 (42,450)           | 2.5 (11.2)      | 31,894 (141,872) | 2.5 (11.2)      |
| S08C50-13 | 24,160 (107,470)         | 0.3 (1.5)       | 58,905 (262,022) | 0.3 (1.5)       | S12C50-36 | 14,911 (66,328)          | 1.8 (7.9)       | 49,834 (221,675) | 1.8 (7.9)       |
| S08C60-13 | 34,791 (154,757)         | 0.2 (1.0)       | 84,823 (377,312) | 0.2 (1.0)       | S12C60-36 | 21,472 (95,512)          | 1.2 (5.2)       | 71,762 (319,211) | 1.2 (5.2)       |

**S Series - SHA 1in to 6in All-In-One Solution**

| Series    | Continuous Duty @ 230Vac |                 | Peak @ 230Vac    |                 | Series    | Continuous Duty @ 230Vac |                 | Peak @ 230Vac    |                 |
|-----------|--------------------------|-----------------|------------------|-----------------|-----------|--------------------------|-----------------|------------------|-----------------|
|           | Force-Lbf (N)            | Avg-In/s (mm/s) | Force-Lbf (N)    | Avg-In/s (mm/s) |           | Force-Lbf (N)            | Avg-In/s (mm/s) | Force-Lbf (N)    | Avg-In/s (mm/s) |
| S13C10-23 | 2,310 (10,275)           | 14.8 (65.7)     | 2,356 (10,481)   | 14.8 (65.7)     | S14C10-23 | 2,356 (10,481)           | 14.8 (65.7)     | 2,356 (10,481)   | 14.8 (65.7)     |
| S13C15-23 | 5,197 (23,119)           | 5.5 (24.4)      | 5,301 (23,582)   | 5.5 (24.4)      | S14C15-23 | 5,301 (23,582)           | 5.5 (24.4)      | 5,301 (23,582)   | 5.5 (24.4)      |
| S13C20-23 | 9,240 (41,101)           | 3.3 (14.5)      | 9,425 (41,924)   | 3.3 (14.5)      | S14C20-23 | 9,425 (41,924)           | 3.3 (14.5)      | 9,425 (41,924)   | 3.3 (14.5)      |
| S13C25-23 | 14,437 (64,221)          | 2.2 (9.7)       | 14,726 (65,505)  | 2.2 (9.7)       | S14C25-23 | 14,726 (65,505)          | 2.2 (9.7)       | 14,726 (65,505)  | 2.2 (9.7)       |
| S13C32-23 | 24,399 (108,533)         | 1.2 (5.2)       | 24,887 (110,704) | 1.2 (5.2)       | S14C32-23 | 24,887 (110,704)         | 1.2 (5.2)       | 24,887 (110,704) | 1.2 (5.2)       |
| S13C40-23 | 36,960 (164,405)         | 0.8 (3.6)       | 37,699 (167,694) | 0.8 (3.6)       | S14C40-23 | 37,699 (167,694)         | 0.8 (3.6)       | 37,699 (167,694) | 0.8 (3.6)       |
| S13C50-23 | 57,749 (256,882)         | 0.6 (2.6)       | 58,905 (262,022) | 0.6 (2.6)       | S14C50-23 | 58,905 (262,022)         | 0.6 (2.6)       | 58,905 (262,022) | 0.6 (2.6)       |
| S13C60-23 | 83,159 (369,910)         | 0.4 (1.7)       | 84,823 (377,312) | 0.4 (1.7)       | S14C60-23 | 84,823 (377,312)         | 0.4 (1.7)       | 84,823 (377,312) | 0.4 (1.7)       |
| S13C10-27 | 1,719 (7,647)            | 19.9 (88.3)     | 2,356 (10,481)   | 19.9 (88.3)     | S14C10-27 | 2,188 (9,732)            | 19.9 (88.3)     | 2,356 (10,481)   | 19.9 (88.3)     |
| S13C15-27 | 3,868 (17,205)           | 7.4 (32.8)      | 5,301 (23,582)   | 7.4 (32.8)      | S14C15-27 | 4,923 (21,897)           | 7.4 (32.8)      | 5,301 (23,582)   | 7.4 (32.8)      |
| S13C20-27 | 6,876 (30,587)           | 4.4 (19.5)      | 9,425 (41,924)   | 4.4 (19.5)      | S14C20-27 | 8,752 (38,929)           | 4.4 (19.5)      | 9,425 (41,924)   | 4.4 (19.5)      |
| S13C25-27 | 10,744 (47,792)          | 2.9 (13.0)      | 14,726 (65,505)  | 2.9 (13.0)      | S14C25-27 | 13,674 (60,826)          | 2.9 (13.0)      | 14,726 (65,505)  | 2.9 (13.0)      |
| S13C32-27 | 18,157 (80,769)          | 1.6 (7.0)       | 24,887 (110,704) | 1.6 (7.0)       | S14C32-27 | 23,110 (102,796)         | 1.6 (7.0)       | 24,887 (110,704) | 1.6 (7.0)       |
| S13C40-27 | 27,505 (122,348)         | 1.1 (4.9)       | 37,699 (167,694) | 1.1 (4.9)       | S14C40-27 | 35,006 (155,715)         | 1.1 (4.9)       | 37,699 (167,694) | 1.1 (4.9)       |
| S13C50-27 | 42,976 (191,168)         | 0.8 (3.4)       | 58,905 (262,022) | 0.8 (3.4)       | S14C50-27 | 54,697 (243,305)         | 0.8 (3.4)       | 58,905 (262,022) | 0.8 (3.4)       |
| S13C60-27 | 61,886 (275,282)         | 0.5 (2.2)       | 84,823 (377,312) | 0.5 (2.2)       | S14C60-27 | 78,764 (350,359)         | 0.5 (2.2)       | 84,823 (377,312) | 0.5 (2.2)       |
| S13C10-31 | 1,253 (5,573)            | 27.2 (121.2)    | 2,356 (10,481)   | 27.2 (121.2)    | S14C10-31 | 1,595 (7,093)            | 27.2 (121.2)    | 2,356 (10,481)   | 27.2 (121.2)    |
| S13C15-31 | 2,819 (12,539)           | 10.1 (45.1)     | 5,301 (23,582)   | 10.1 (45.1)     | S14C15-31 | 3,588 (15,959)           | 10.1 (45.1)     | 5,301 (23,582)   | 10.1 (45.1)     |
| S13C20-31 | 5,011 (22,292)           | 6.0 (26.8)      | 9,425 (41,924)   | 6.0 (26.8)      | S14C20-31 | 6,378 (28,372)           | 6.0 (26.8)      | 9,425 (41,924)   | 6.0 (26.8)      |
| S13C25-31 | 7,830 (34,831)           | 4.0 (17.9)      | 14,726 (65,505)  | 4.0 (17.9)      | S14C25-31 | 9,966 (44,331)           | 4.0 (17.9)      | 14,726 (65,505)  | 4.0 (17.9)      |
| S13C32-31 | 13,233 (58,865)          | 2.2 (9.6)       | 24,887 (110,704) | 2.2 (9.6)       | S14C32-31 | 16,843 (74,919)          | 2.2 (9.6)       | 24,887 (110,704) | 2.2 (9.6)       |
| S13C40-31 | 20,046 (89,169)          | 1.5 (6.7)       | 37,699 (167,694) | 1.5 (6.7)       | S14C40-31 | 25,513 (113,487)         | 1.5 (6.7)       | 37,699 (167,694) | 1.5 (6.7)       |
| S13C50-31 | 31,322 (139,326)         | 1.1 (4.7)       | 58,905 (262,022) | 1.1 (4.7)       | S14C50-31 | 39,864 (177,324)         | 1.1 (4.7)       | 58,905 (262,022) | 1.1 (4.7)       |
| S13C60-31 | 45,103 (200,629)         | 0.7 (3.1)       | 84,823 (377,312) | 0.7 (3.1)       | S14C60-31 | 57,404 (255,346)         | 0.7 (3.1)       | 84,823 (377,312) | 0.7 (3.1)       |
| S13C10-34 | 948 (4,216)              | 36.0 (160.2)    | 2,356 (10,481)   | 36.0 (160.2)    | S14C10-34 | 1,206 (5,365)            | 36.0 (160.2)    | 2,356 (10,481)   | 36.0 (160.2)    |
| S13C15-34 | 2,132 (9,485)            | 13.4 (59.6)     | 5,301 (23,582)   | 13.4 (59.6)     | S14C15-34 | 2,714 (12,072)           | 13.4 (59.6)     | 5,301 (23,582)   | 13.4 (59.6)     |
| S13C20-34 | 3,791 (16,862)           | 8.0 (35.4)      | 9,425 (41,924)   | 8.0 (35.4)      | S14C20-34 | 4,825 (21,461)           | 8.0 (35.4)      | 9,425 (41,924)   | 8.0 (35.4)      |
| S13C25-34 | 5,923 (26,347)           | 5.3 (23.6)      | 14,726 (65,505)  | 5.3 (23.6)      | S14C25-34 | 7,538 (33,532)           | 5.3 (23.6)      | 14,726 (65,505)  | 5.3 (23.6)      |
| S13C32-34 | 10,010 (44,526)          | 2.9 (12.7)      | 24,887 (110,704) | 2.9 (12.7)      | S14C32-34 | 12,740 (56,670)          | 2.9 (12.7)      | 24,887 (110,704) | 2.9 (12.7)      |
| S13C40-34 | 15,163 (67,448)          | 2.0 (8.8)       | 37,699 (167,694) | 2.0 (8.8)       | S14C40-34 | 19,298 (85,843)          | 2.0 (8.8)       | 37,699 (167,694) | 2.0 (8.8)       |
| S13C50-34 | 23,692 (105,388)         | 1.4 (6.2)       | 58,905 (262,022) | 1.4 (6.2)       | S14C50-34 | 30,154 (134,130)         | 1.4 (6.2)       | 58,905 (262,022) | 1.4 (6.2)       |
| S13C60-34 | 34,117 (151,758)         | 0.9 (4.1)       | 84,823 (377,312) | 0.9 (4.1)       | S14C60-34 | 43,421 (193,147)         | 0.9 (4.1)       | 84,823 (377,312) | 0.9 (4.1)       |
| S13C10-36 | 748 (3,328)              | 45.6 (202.9)    | 2,239 (9,961)    | 45.6 (202.9)    | S14C10-36 | 952 (4,236)              | 45.6 (202.9)    | 2,239 (9,961)    | 45.6 (202.9)    |
| S13C15-36 | 1,683 (7,488)            | 17.0 (75.5)     | 5,038 (22,412)   | 17.0 (75.5)     | S14C15-36 | 2,142 (9,530)            | 17.0 (75.5)     | 5,038 (22,412)   | 17.0 (75.5)     |
| S13C20-36 | 2,993 (13,312)           | 10.1 (44.8)     | 8,957 (39,843)   | 10.1 (44.8)     | S14C20-36 | 3,809 (16,943)           | 10.1 (44.8)     | 8,957 (39,843)   | 10.1 (44.8)     |
| S13C25-36 | 4,676 (20,800)           | 6.7 (29.9)      | 13,995 (62,255)  | 6.7 (29.9)      | S14C25-36 | 5,951 (26,473)           | 6.7 (29.9)      | 13,995 (62,255)  | 6.7 (29.9)      |
| S13C32-36 | 7,903 (35,152)           | 3.6 (16.1)      | 23,652 (105,211) | 3.6 (16.1)      | S14C32-36 | 10,058 (44,739)          | 3.6 (16.1)      | 23,652 (105,211) | 3.6 (16.1)      |
| S13C40-36 | 11,971 (53,248)          | 2.5 (11.2)      | 35,828 (159,373) | 2.5 (11.2)      | S14C40-36 | 15,235 (67,771)          | 2.5 (11.2)      | 35,828 (159,373) | 2.5 (11.2)      |
| S13C50-36 | 18,704 (83,201)          | 1.8 (7.9)       | 55,982 (249,020) | 1.8 (7.9)       | S14C50-36 | 23,805 (105,892)         | 1.8 (7.9)       | 55,982 (249,020) | 1.8 (7.9)       |
| S13C60-36 | 26,934 (119,809)         | 1.2 (5.2)       | 80,614 (358,589) | 1.2 (5.2)       | S14C60-36 | 34,280 (152,484)         | 1.2 (5.2)       | 80,614 (358,589) | 1.2 (5.2)       |

**S Series - SHA 1in to 6in All-In-One Solution**

| Series    | Continuous Duty @ 230Vac |                 | Peak @ 230Vac    |                 | Series    | Continuous Duty @ 230Vac |                 | Peak @ 230Vac    |                 |
|-----------|--------------------------|-----------------|------------------|-----------------|-----------|--------------------------|-----------------|------------------|-----------------|
|           | Force-Lbf (N)            | Avg-In/s (mm/s) | Force-Lbf (N)    | Avg-In/s (mm/s) |           | Force-Lbf (N)            | Avg-In/s (mm/s) | Force-Lbf (N)    | Avg-In/s (mm/s) |
| S17C10-23 | 2,356 (10,481)           | 9.8 (43.8)      | 2,356 (10,481)   | 9.8 (43.8)      | S19C10-23 | 2,356 (10,481)           | 14.8 (65.7)     | 2,356 (10,481)   | 14.8 (65.7)     |
| S17C15-23 | 5,301 (23,582)           | 3.7 (16.3)      | 5,301 (23,582)   | 3.7 (16.3)      | S19C15-23 | 5,301 (23,582)           | 5.5 (24.4)      | 5,301 (23,582)   | 5.5 (24.4)      |
| S17C20-23 | 9,425 (41,924)           | 2.2 (9.7)       | 9,425 (41,924)   | 2.2 (9.7)       | S19C20-23 | 9,425 (41,924)           | 3.3 (14.5)      | 9,425 (41,924)   | 3.3 (14.5)      |
| S17C25-23 | 14,726 (65,505)          | 1.5 (6.5)       | 14,726 (65,505)  | 1.5 (6.5)       | S19C25-23 | 14,726 (65,505)          | 2.2 (9.7)       | 14,726 (65,505)  | 2.2 (9.7)       |
| S17C32-23 | 24,887 (110,704)         | 0.8 (3.5)       | 24,887 (110,704) | 0.8 (3.5)       | S19C32-23 | 24,887 (110,704)         | 1.2 (5.2)       | 24,887 (110,704) | 1.2 (5.2)       |
| S17C40-23 | 37,699 (167,694)         | 0.5 (2.4)       | 37,699 (167,694) | 0.5 (2.4)       | S19C40-23 | 37,699 (167,694)         | 0.8 (3.6)       | 37,699 (167,694) | 0.8 (3.6)       |
| S17C50-23 | 58,905 (262,022)         | 0.4 (1.7)       | 58,905 (262,022) | 0.4 (1.7)       | S19C50-23 | 58,905 (262,022)         | 0.6 (2.6)       | 58,905 (262,022) | 0.6 (2.6)       |
| S17C60-23 | 84,823 (377,312)         | 0.3 (1.1)       | 84,823 (377,312) | 0.3 (1.1)       | S19C60-23 | 84,823 (377,312)         | 0.4 (1.7)       | 84,823 (377,312) | 0.4 (1.7)       |
| S17C10-27 | 2,356 (10,481)           | 13.2 (58.9)     | 2,356 (10,481)   | 13.2 (58.9)     | S19C10-27 | 2,356 (10,481)           | 19.9 (88.3)     | 9,425 (41,924)   | 19.9 (88.3)     |
| S17C15-27 | 5,301 (23,582)           | 4.9 (21.9)      | 5,301 (23,582)   | 4.9 (21.9)      | S19C15-27 | 5,301 (23,582)           | 7.4 (32.8)      | 5,301 (23,582)   | 7.4 (32.8)      |
| S17C20-27 | 9,425 (41,924)           | 2.9 (13.0)      | 9,425 (41,924)   | 2.9 (13.0)      | S19C20-27 | 9,425 (41,924)           | 4.4 (19.5)      | 9,425 (41,924)   | 4.4 (19.5)      |
| S17C25-27 | 14,726 (65,505)          | 2.0 (8.7)       | 14,726 (65,505)  | 2.0 (8.7)       | S19C25-27 | 14,726 (65,505)          | 2.9 (13.0)      | 14,726 (65,505)  | 2.9 (13.0)      |
| S17C32-27 | 24,887 (110,704)         | 1.1 (4.7)       | 24,887 (110,704) | 1.1 (4.7)       | S19C32-27 | 24,887 (110,704)         | 1.6 (7.0)       | 24,887 (110,704) | 1.6 (7.0)       |
| S17C40-27 | 37,699 (167,694)         | 0.7 (3.3)       | 37,699 (167,694) | 0.7 (3.3)       | S19C40-27 | 37,699 (167,694)         | 1.1 (4.9)       | 37,699 (167,694) | 1.1 (4.9)       |
| S17C50-27 | 58,905 (262,022)         | 0.5 (2.3)       | 58,905 (262,022) | 0.5 (2.3)       | S19C50-27 | 58,905 (262,022)         | 0.8 (3.4)       | 58,905 (262,022) | 0.8 (3.4)       |
| S17C60-27 | 84,823 (377,312)         | 0.3 (1.5)       | 84,823 (377,312) | 0.3 (1.5)       | S19C60-27 | 84,823 (377,312)         | 0.5 (2.2)       | 84,823 (377,312) | 0.5 (2.2)       |
| S17C10-31 | 2,356 (10,481)           | 18.2 (80.8)     | 2,356 (10,481)   | 18.2 (80.8)     | S19C10-31 | 2,356 (10,481)           | 27.2 (121.2)    | 2,356 (10,481)   | 27.2 (121.2)    |
| S17C15-31 | 5,301 (23,582)           | 6.8 (30.0)      | 5,301 (23,582)   | 6.8 (30.0)      | S19C15-31 | 5,301 (23,582)           | 10.1 (45.1)     | 5,301 (23,582)   | 10.1 (45.1)     |
| S17C20-31 | 9,425 (41,924)           | 4.0 (17.8)      | 9,425 (41,924)   | 4.0 (17.8)      | S19C20-31 | 9,425 (41,924)           | 6.0 (26.8)      | 9,425 (41,924)   | 6.0 (26.8)      |
| S17C25-31 | 14,726 (65,505)          | 2.7 (11.9)      | 14,726 (65,505)  | 2.7 (11.9)      | S19C25-31 | 14,726 (65,505)          | 4.0 (17.9)      | 14,726 (65,505)  | 4.0 (17.9)      |
| S17C32-31 | 24,887 (110,704)         | 1.4 (6.4)       | 24,887 (110,704) | 1.4 (6.4)       | S19C32-31 | 24,887 (110,704)         | 2.2 (9.6)       | 24,887 (110,704) | 2.2 (9.6)       |
| S17C40-31 | 37,699 (167,694)         | 1.0 (4.5)       | 37,699 (167,694) | 1.0 (4.5)       | S19C40-31 | 37,699 (167,694)         | 1.5 (6.7)       | 37,699 (167,694) | 1.5 (6.7)       |
| S17C50-31 | 58,905 (262,022)         | 0.7 (3.1)       | 58,905 (262,022) | 0.7 (3.1)       | S19C50-31 | 58,905 (262,022)         | 1.1 (4.7)       | 58,905 (262,022) | 1.1 (4.7)       |
| S17C60-31 | 84,823 (377,312)         | 0.5 (2.1)       | 84,823 (377,312) | 0.5 (2.1)       | S19C60-31 | 84,823 (377,312)         | 0.7 (3.1)       | 84,823 (377,312) | 0.7 (3.1)       |
| S17C10-34 | 2,134 (9,492)            | 24.0 (106.8)    | 2,356 (10,481)   | 24.0 (106.8)    | S19C10-34 | 2,266 (10,082)           | 36.0 (160.2)    | 2,356 (10,481)   | 36.0 (160.2)    |
| S17C15-34 | 4,801 (21,358)           | 8.9 (39.7)      | 5,301 (23,582)   | 8.9 (39.7)      | S19C15-34 | 5,100 (22,684)           | 13.4 (59.6)     | 5,301 (23,582)   | 13.4 (59.6)     |
| S17C20-34 | 8,536 (37,969)           | 5.3 (23.6)      | 9,425 (41,924)   | 5.3 (23.6)      | S19C20-34 | 9,066 (40,327)           | 8.0 (35.4)      | 9,425 (41,924)   | 8.0 (35.4)      |
| S17C25-34 | 13,337 (59,327)          | 3.5 (15.7)      | 14,726 (65,505)  | 3.5 (15.7)      | S19C25-34 | 14,166 (63,011)          | 5.3 (23.6)      | 14,726 (65,505)  | 5.3 (23.6)      |
| S17C32-34 | 22,540 (100,262)         | 1.9 (8.5)       | 24,887 (110,704) | 1.9 (8.5)       | S19C32-34 | 23,940 (106,489)         | 2.9 (12.7)      | 24,887 (110,704) | 2.9 (12.7)      |
| S17C40-34 | 34,143 (151,876)         | 1.3 (5.9)       | 37,699 (167,694) | 1.3 (5.9)       | S19C40-34 | 36,264 (161,309)         | 2.0 (8.8)       | 37,699 (167,694) | 2.0 (8.8)       |
| S17C50-34 | 53,349 (237,306)         | 0.9 (4.1)       | 58,905 (262,022) | 0.9 (4.1)       | S19C50-34 | 56,662 (252,046)         | 1.4 (6.2)       | 58,905 (262,022) | 1.4 (6.2)       |
| S17C60-34 | 76,822 (341,721)         | 0.6 (2.7)       | 84,823 (377,312) | 0.6 (2.7)       | S19C60-34 | 81,593 (362,946)         | 0.9 (4.1)       | 84,823 (377,312) | 0.9 (4.1)       |
| S17C10-36 | 1,685 (7,494)            | 30.4 (135.3)    | 2,239 (9,961)    | 30.4 (135.3)    | S19C10-36 | 1,789 (7,959)            | 45.6 (202.9)    | 2,239 (9,961)    | 45.6 (202.9)    |
| S17C15-36 | 3,791 (16,861)           | 11.3 (50.3)     | 5,038 (22,412)   | 11.3 (50.3)     | S19C15-36 | 4,026 (17,909)           | 17.0 (75.5)     | 5,038 (22,412)   | 17.0 (75.5)     |
| S17C20-36 | 6,739 (29,976)           | 6.7 (29.9)      | 8,957 (39,843)   | 6.7 (29.9)      | S19C20-36 | 7,157 (31,837)           | 10.1 (44.8)     | 8,957 (39,843)   | 10.1 (44.8)     |
| S17C25-36 | 10,529 (46,837)          | 4.5 (19.9)      | 13,995 (62,255)  | 4.5 (19.9)      | S19C25-36 | 11,183 (49,746)          | 6.7 (29.9)      | 13,995 (62,255)  | 6.7 (29.9)      |
| S17C32-36 | 17,795 (79,154)          | 2.4 (10.8)      | 23,652 (105,211) | 2.4 (10.8)      | S19C32-36 | 18,900 (84,071)          | 3.6 (16.1)      | 23,652 (105,211) | 3.6 (16.1)      |
| S17C40-36 | 26,955 (119,902)         | 1.7 (7.5)       | 35,828 (159,373) | 1.7 (7.5)       | S19C40-36 | 28,629 (127,349)         | 2.5 (11.2)      | 35,828 (159,373) | 2.5 (11.2)      |
| S17C50-36 | 42,117 (187,347)         | 1.2 (5.3)       | 55,982 (249,020) | 1.2 (5.3)       | S19C50-36 | 44,733 (198,983)         | 1.8 (7.9)       | 55,982 (249,020) | 1.8 (7.9)       |
| S17C60-36 | 60,649 (269,780)         | 0.8 (3.4)       | 80,614 (358,589) | 0.8 (3.4)       | S19C60-36 | 64,416 (286,536)         | 1.2 (5.2)       | 80,614 (358,589) | 1.2 (5.2)       |

S13C10-36

'S' – Standard SHA  
 '13' – 130mm motor  
 'C10' – 1.0in cylinder  
 '36' – 36 pump

| Series    | Continuous Duty, |
|-----------|------------------|
|           | Force-Lbf (N)    |
| S08C10-13 | 966 (4,299)      |
| S13C10-36 | 732 (3,258)      |
| S19C10-36 | 2,197 (9,775)    |
| S08C15-13 | 2,174 (9,672)    |
| S13C15-36 | 1,648 (7,331)    |
| S19C15-36 | 4,944 (21,993)   |
| S08C15-13 | 3,866 (17,195)   |

**E Series - IP68 Enclosed Solution**

| Series    | Continuous Duty @ 24Vdc |                    | Peak @ 24Vdc     |                    |
|-----------|-------------------------|--------------------|------------------|--------------------|
|           | Force-Lbf (N)           | Avg-In/s<br>(mm/s) | Force-Lbf (N)    | Avg-In/s<br>(mm/s) |
| E06C10-02 | 2,356 (10,481)          | 1.2 (5.1)          | 2,356 (10,481)   | 1.3 (6.0)          |
| E06C15-02 | 5,301 (23,582)          | 0.4 (1.9)          | 5,301 (23,582)   | 0.5 (2.2)          |
| E06C20-02 | 9,425 (41,924)          | 0.3 (1.1)          | 9,425 (41,924)   | 0.3 (1.3)          |
| E06C25-02 | 14,726 (65,505)         | 0.2 (0.8)          | 14,726 (65,505)  | 0.2 (0.9)          |
| E06C32-02 | 24,887 (110,704)        | 0.1 (0.4)          | 24,887 (110,704) | 0.1 (0.5)          |
| E06C10-05 | 1,034 (4,599)           | 2.6 (11.7)         | 2,356 (10,481)   | 3.1 (13.7)         |
| E06C15-05 | 2,326 (10,347)          | 1.0 (4.4)          | 5,301 (23,582)   | 1.1 (5.1)          |
| E06C20-05 | 4,135 (18,395)          | 0.6 (2.6)          | 9,425 (41,924)   | 0.7 (3.0)          |
| E06C25-05 | 6,461 (28,742)          | 0.4 (1.7)          | 14,726 (65,505)  | 0.5 (2.0)          |
| E06C32-05 | 10,920 (48,574)         | 0.2 (0.9)          | 24,887 (110,704) | 0.2 (1.1)          |
| E06C10-07 | 601 (2,675)             | 4.5 (20.1)         | 1,408 (6,265)    | 5.3 (23.5)         |
| E06C15-07 | 1,353 (6,018)           | 1.7 (7.5)          | 3,169 (14,095)   | 2.0 (8.7)          |
| E06C20-07 | 2,405 (10,699)          | 1.0 (4.4)          | 5,633 (25,058)   | 1.2 (5.2)          |
| E06C25-07 | 3,758 (16,717)          | 0.7 (3.0)          | 8,802 (39,154)   | 0.8 (3.5)          |
| E06C32-07 | 6,351 (28,252)          | 0.4 (1.6)          | 14,876 (66,170)  | 0.4 (1.9)          |
| E06C10-11 | 388 (1,725)             | 7.0 (31.2)         | 908 (4,039)      | 8.2 (36.4)         |
| E06C15-11 | 872 (3,880)             | 2.6 (11.6)         | 2,043 (9,088)    | 3.0 (13.5)         |
| E06C20-11 | 1,551 (6,898)           | 1.6 (6.9)          | 3,632 (16,156)   | 1.8 (8.0)          |
| E06C25-11 | 2,423 (10,778)          | 1.0 (4.6)          | 5,675 (25,244)   | 1.2 (5.4)          |
| E06C32-11 | 4,095 (18,215)          | 0.6 (2.5)          | 9,591 (42,662)   | 0.7 (2.9)          |
| E06C10-13 | 256 (1,140)             | 10.6 (47.2)        | 600 (2,669)      | 12.4 (55.1)        |
| E06C15-13 | 576 (2,564)             | 3.9 (17.6)         | 1,350 (6,006)    | 4.6 (20.5)         |
| E06C20-13 | 1,025 (4,559)           | 2.3 (10.4)         | 2,400 (10,677)   | 2.7 (12.2)         |
| E06C25-13 | 1,601 (7,123)           | 1.6 (7.0)          | 3,750 (16,683)   | 1.8 (8.1)          |
| E06C32-13 | 2,706 (12,038)          | 0.8 (3.8)          | 6,338 (28,194)   | 1.0 (4.4)          |

**H-Series - HSHF -- Single HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 1H12C10-32-23 | 947 (4,213)              | 14.8 (37.5)            | 19,451 [9.7] (87)         | 1.0 (2.5)                      | 1H12C15-32-23 | 3,249 (14,453)           | 5.5 (14.0)             | 19,451 [9.7] (87)         | 0.9 (2.2)                      |
| 1H12C10-40-23 | 922 (4,102)              | 14.8 (37.5)            | 29,464 [14.7] (131)       | 0.7 (1.7)                      | 1H12C15-40-23 | 3,224 (14,341)           | 5.5 (14.0)             | 29,464 [14.7] (131)       | 0.6 (1.6)                      |
| 1H12C10-50-23 | 872 (3,880)              | 14.8 (37.5)            | 46,038 [23.0] (205)       | 0.4 (1.1)                      | 1H12C15-50-23 | 3,174 (14,119)           | 5.5 (14.0)             | 46,038 [23.0] (205)       | 0.4 (1.0)                      |
| 1H12C10-60-23 | 847 (3,768)              | 14.8 (37.5)            | 66,295 [33.1] (295)       | 0.3 (.8)                       | 1H12C15-60-23 | 3,149 (14,008)           | 5.5 (14.0)             | 66,295 [33.1] (295)       | 0.3 (.7)                       |
| 1H12C10-32-27 | 660 (2,936)              | 19.9 (50.4)            | 14,475 [7.2] (64)         | 1.3 (3.3)                      | 1H12C15-32-27 | 2,373 (10,556)           | 7.4 (18.8)             | 14,475 [7.2] (64)         | 1.2 (3.0)                      |
| 1H12C10-40-27 | 635 (2,825)              | 19.9 (50.4)            | 21,927 [11.0] (98)        | 0.9 (2.2)                      | 1H12C15-40-27 | 2,348 (10,445)           | 7.4 (18.8)             | 21,927 [11.0] (98)        | 0.8 (2.1)                      |
| 1H12C10-50-27 | 585 (2,603)              | 19.9 (50.4)            | 34,261 [17.1] (152)       | 0.6 (1.5)                      | 1H12C15-50-27 | 2,298 (10,223)           | 7.4 (18.8)             | 34,261 [17.1] (152)       | 0.6 (1.4)                      |
| 1H12C10-60-27 | 560 (2,491)              | 19.9 (50.4)            | 49,336 [24.7] (219)       | 0.4 (1.0)                      | 1H12C15-60-27 | 2,273 (10,111)           | 7.4 (18.8)             | 49,336 [24.7] (219)       | 0.4 (1.0)                      |
| 1H12C10-32-31 | 434 (1,929)              | 27.2 (69.2)            | 10,550 [5.3] (47)         | 1.8 (4.5)                      | 1H12C15-32-31 | 1,682 (7,482)            | 10.1 (25.7)            | 10,550 [5.3] (47)         | 1.6 (4.1)                      |
| 1H12C10-40-31 | 409 (1,818)              | 27.2 (69.2)            | 15,981 [8.0] (71)         | 1.2 (3.1)                      | 1H12C15-40-31 | 1,657 (7,371)            | 10.1 (25.7)            | 15,981 [8.0] (71)         | 1.1 (2.9)                      |
| 1H12C10-50-31 | 359 (1,595)              | 27.2 (69.2)            | 24,970 [12.5] (111)       | 0.8 (2.0)                      | 1H12C15-50-31 | 1,607 (7,149)            | 10.1 (25.7)            | 24,970 [12.5] (111)       | 0.8 (1.9)                      |
| 1H12C10-60-31 | 334 (1,484)              | 27.2 (69.2)            | 35,956 [18.0] (160)       | 0.6 (1.4)                      | 1H12C15-60-31 | 1,582 (7,038)            | 10.1 (25.7)            | 35,956 [18.0] (160)       | 0.5 (1.4)                      |
| 1H12C10-32-34 | 285 (1,269)              | 36.0 (91.5)            | 7,980 [4.0] (35)          | 2.4 (6.0)                      | 1H12C15-32-34 | 1,230 (5,470)            | 13.4 (34.0)            | 7,980 [4.0] (35)          | 2.1 (5.4)                      |
| 1H12C10-40-34 | 260 (1,158)              | 36.0 (91.5)            | 12,088 [6.0] (54)         | 1.6 (4.1)                      | 1H12C15-40-34 | 1,205 (5,359)            | 13.4 (34.0)            | 12,088 [6.0] (54)         | 1.5 (3.8)                      |
| 1H12C10-50-34 | 210 (936)                | 36.0 (91.5)            | 18,887 [9.4] (84)         | 1.0 (2.7)                      | 1H12C15-50-34 | 1,155 (5,137)            | 13.4 (34.0)            | 18,887 [9.4] (84)         | 1.0 (2.5)                      |
| 1H12C10-60-34 | 185 (825)                | 36.0 (91.5)            | 27,198 [13.6] (121)       | 0.7 (1.9)                      | 1H12C15-60-34 | 1,130 (5,025)            | 13.4 (34.0)            | 27,198 [13.6] (121)       | 0.7 (1.8)                      |
| 1H12C10-32-36 | 188 (838)                | 45.6 (115.9)           | 6,300 [3.1] (28)          | 3.0 (7.6)                      | 1H12C15-32-36 | 934 (4,155)              | 17.0 (43.1)            | 6,300 [3.1] (28)          | 2.7 (6.8)                      |
| 1H12C10-40-36 | 163 (727)                | 45.6 (115.9)           | 9,543 [4.8] (42)          | 2.0 (5.2)                      | 1H12C15-40-36 | 909 (4,043)              | 17.0 (43.1)            | 9,543 [4.8] (42)          | 1.9 (4.8)                      |
| 1H12C10-50-36 | 113 (505)                | 45.6 (115.9)           | 14,911 [7.5] (66)         | 1.3 (3.4)                      | 1H12C15-50-36 | 859 (3,821)              | 17.0 (43.1)            | 14,911 [7.5] (66)         | 1.3 (3.2)                      |
| 1H12C10-60-36 | 88 (393)                 | 45.6 (115.9)           | 21,472 [10.7] (96)        | 0.9 (2.4)                      | 1H12C15-60-36 | 834 (3,710)              | 17.0 (43.1)            | 21,472 [10.7] (96)        | 0.9 (2.3)                      |
|               |                          |                        |                           |                                |               |                          |                        |                           |                                |
| 1H12C20-32-23 | 5,350 (23,796)           | 2.9 (7.5)              | 19,451 [9.7] (87)         | 1.0 (2.5)                      | 1H12C25-32-23 | 7,853 (34,931)           | 1.8 (4.7)              | 19,451 [9.7] (87)         | 0.7 (1.7)                      |
| 1H12C20-40-23 | 5,325 (23,685)           | 2.9 (7.5)              | 29,464 [14.7] (131)       | 0.7 (1.7)                      | 1H12C25-40-23 | 7,828 (34,820)           | 1.8 (4.7)              | 29,464 [14.7] (131)       | 0.5 (1.3)                      |
| 1H12C20-50-23 | 5,275 (23,462)           | 2.9 (7.5)              | 46,038 [23.0] (205)       | 0.4 (1.1)                      | 1H12C25-50-23 | 7,778 (34,598)           | 1.8 (4.7)              | 46,038 [23.0] (205)       | 0.4 (.9)                       |
| 1H12C20-60-23 | 5,250 (23,351)           | 2.9 (7.5)              | 66,295 [33.1] (295)       | 0.3 (.8)                       | 1H12C25-60-23 | 7,753 (34,487)           | 1.8 (4.7)              | 66,295 [33.1] (295)       | 0.3 (.7)                       |
| 1H12C20-32-27 | 3,936 (17,510)           | 4.0 (10.1)             | 14,475 [7.2] (64)         | 1.3 (3.3)                      | 1H12C25-32-27 | 5,799 (25,796)           | 2.5 (6.3)              | 14,475 [7.2] (64)         | 0.9 (2.3)                      |
| 1H12C20-40-27 | 3,911 (17,398)           | 4.0 (10.1)             | 21,927 [11.0] (98)        | 0.9 (2.2)                      | 1H12C25-40-27 | 5,774 (25,685)           | 2.5 (6.3)              | 21,927 [11.0] (98)        | 0.7 (1.7)                      |
| 1H12C20-50-27 | 3,861 (17,176)           | 4.0 (10.1)             | 34,261 [17.1] (152)       | 0.6 (1.5)                      | 1H12C25-50-27 | 5,724 (25,463)           | 2.5 (6.3)              | 34,261 [17.1] (152)       | 0.5 (1.2)                      |
| 1H12C20-60-27 | 3,836 (17,065)           | 4.0 (10.1)             | 49,336 [24.7] (219)       | 0.4 (1.0)                      | 1H12C25-60-27 | 5,699 (25,351)           | 2.5 (6.3)              | 49,336 [24.7] (219)       | 0.4 (.9)                       |
| 1H12C20-32-31 | 2,821 (12,550)           | 5.4 (13.8)             | 10,550 [5.3] (47)         | 1.4 (3.6)                      | 1H12C25-32-31 | 4,179 (18,590)           | 3.4 (8.7)              | 10,550 [5.3] (47)         | 1.2 (3.1)                      |
| 1H12C20-40-31 | 2,796 (12,439)           | 5.4 (13.8)             | 15,981 [8.0] (71)         | 1.0 (2.6)                      | 1H12C25-40-31 | 4,154 (18,478)           | 3.4 (8.7)              | 15,981 [8.0] (71)         | 0.9 (2.4)                      |
| 1H12C20-50-31 | 2,746 (12,216)           | 5.4 (13.8)             | 24,970 [12.5] (111)       | 0.7 (1.8)                      | 1H12C25-50-31 | 4,104 (18,256)           | 3.4 (8.7)              | 24,970 [12.5] (111)       | 0.7 (1.7)                      |
| 1H12C20-60-31 | 2,721 (12,105)           | 5.4 (13.8)             | 35,956 [18.0] (160)       | 0.5 (1.3)                      | 1H12C25-60-31 | 4,079 (18,145)           | 3.4 (8.7)              | 35,956 [18.0] (160)       | 0.5 (1.2)                      |
| 1H12C20-32-34 | 2,091 (9,303)            | 7.2 (18.3)             | 7,980 [4.0] (35)          | 1.9 (4.8)                      | 1H12C25-32-34 | 3,118 (13,872)           | 4.5 (11.5)             | 7,980 [4.0] (35)          | 1.6 (4.1)                      |
| 1H12C20-40-34 | 2,066 (9,192)            | 7.2 (18.3)             | 12,088 [6.0] (54)         | 1.4 (3.5)                      | 1H12C25-40-34 | 3,093 (13,761)           | 4.5 (11.5)             | 12,088 [6.0] (54)         | 1.2 (3.1)                      |
| 1H12C20-50-34 | 2,016 (8,970)            | 7.2 (18.3)             | 18,887 [9.4] (84)         | 0.9 (2.4)                      | 1H12C25-50-34 | 3,043 (13,538)           | 4.5 (11.5)             | 18,887 [9.4] (84)         | 0.9 (2.2)                      |
| 1H12C20-60-34 | 1,991 (8,859)            | 7.2 (18.3)             | 27,198 [13.6] (121)       | 0.7 (1.7)                      | 1H12C25-60-34 | 3,018 (13,427)           | 4.5 (11.5)             | 27,198 [13.6] (121)       | 0.6 (1.6)                      |
| 1H12C20-32-36 | 1,614 (7,181)            | 9.1 (23.1)             | 6,300 [3.1] (28)          | 2.4 (6.0)                      | 1H12C25-32-36 | 2,425 (10,787)           | 5.7 (14.5)             | 6,300 [3.1] (28)          | 2.1 (5.2)                      |
| 1H12C20-40-36 | 1,589 (7,070)            | 9.1 (23.1)             | 9,543 [4.8] (42)          | 1.7 (4.4)                      | 1H12C25-40-36 | 2,400 (10,676)           | 5.7 (14.5)             | 9,543 [4.8] (42)          | 1.6 (3.9)                      |
| 1H12C20-50-36 | 1,539 (6,847)            | 9.1 (23.1)             | 14,911 [7.5] (66)         | 1.2 (3.0)                      | 1H12C25-50-36 | 2,350 (10,454)           | 5.7 (14.5)             | 14,911 [7.5] (66)         | 1.1 (2.8)                      |
| 1H12C20-60-36 | 1,514 (6,736)            | 9.1 (23.1)             | 21,472 [10.7] (96)        | 0.9 (2.2)                      | 1H12C25-60-36 | 2,325 (10,343)           | 5.7 (14.5)             | 21,472 [10.7] (96)        | 0.8 (2.1)                      |

**H-Series - HSHF -- Single HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 1H13C10-32-23 | 1,233 (5,483)            | 14.8 (37.5)            | 24,399 [12.2] (109)       | 1.0 (2.5)                      | 1H13C15-32-23 | 4,120 (18,327)           | 5.5 (14.0)             | 24,399 [12.2] (109)       | 0.9 (2.2)                      |
| 1H13C10-40-23 | 1,208 (5,372)            | 14.8 (37.5)            | 36,960 [18.5] (164)       | 0.7 (1.7)                      | 1H13C15-40-23 | 4,095 (18,216)           | 5.5 (14.0)             | 36,960 [18.5] (164)       | 0.6 (1.6)                      |
| 1H13C10-50-23 | 1,158 (5,149)            | 14.8 (37.5)            | 57,749 [28.9] (257)       | 0.4 (1.1)                      | 1H13C15-50-23 | 4,045 (17,994)           | 5.5 (14.0)             | 57,749 [28.9] (257)       | 0.4 (1.0)                      |
| 1H13C10-60-23 | 1,133 (5,038)            | 14.8 (37.5)            | 83,159 [41.6] (370)       | 0.3 (.8)                       | 1H13C15-60-23 | 4,020 (17,882)           | 5.5 (14.0)             | 83,159 [41.6] (370)       | 0.3 (.7)                       |
| 1H13C10-32-27 | 873 (3,881)              | 19.9 (50.4)            | 18,157 [9.1] (81)         | 1.3 (3.3)                      | 1H13C15-32-27 | 3,021 (13,440)           | 7.4 (18.8)             | 18,157 [9.1] (81)         | 1.2 (3.0)                      |
| 1H13C10-40-27 | 848 (3,770)              | 19.9 (50.4)            | 27,505 [13.8] (122)       | 0.9 (2.2)                      | 1H13C15-40-27 | 2,996 (13,328)           | 7.4 (18.8)             | 27,505 [13.8] (122)       | 0.8 (2.1)                      |
| 1H13C10-50-27 | 798 (3,548)              | 19.9 (50.4)            | 42,976 [21.5] (191)       | 0.6 (1.5)                      | 1H13C15-50-27 | 2,946 (13,106)           | 7.4 (18.8)             | 42,976 [21.5] (191)       | 0.6 (1.4)                      |
| 1H13C10-60-27 | 773 (3,436)              | 19.9 (50.4)            | 61,886 [30.9] (275)       | 0.4 (1.0)                      | 1H13C15-60-27 | 2,921 (12,995)           | 7.4 (18.8)             | 61,886 [30.9] (275)       | 0.4 (1.0)                      |
| 1H13C10-32-31 | 588 (2,618)              | 27.2 (69.2)            | 13,233 [6.6] (59)         | 1.8 (4.5)                      | 1H13C15-32-31 | 2,155 (9,584)            | 10.1 (25.7)            | 13,233 [6.6] (59)         | 1.6 (4.1)                      |
| 1H13C10-40-31 | 563 (2,506)              | 27.2 (69.2)            | 20,046 [10.0] (89)        | 1.2 (3.1)                      | 1H13C15-40-31 | 2,130 (9,473)            | 10.1 (25.7)            | 20,046 [10.0] (89)        | 1.1 (2.9)                      |
| 1H13C10-50-31 | 513 (2,284)              | 27.2 (69.2)            | 31,322 [15.7] (139)       | 0.8 (2.0)                      | 1H13C15-50-31 | 2,080 (9,250)            | 10.1 (25.7)            | 31,322 [15.7] (139)       | 0.8 (1.9)                      |
| 1H13C10-60-31 | 488 (2,173)              | 27.2 (69.2)            | 45,103 [22.6] (201)       | 0.6 (1.4)                      | 1H13C15-60-31 | 2,055 (9,139)            | 10.1 (25.7)            | 45,103 [22.6] (201)       | 0.5 (1.4)                      |
| 1H13C10-32-34 | 402 (1,790)              | 36.0 (91.5)            | 10,010 [5.0] (45)         | 2.4 (6.0)                      | 1H13C15-32-34 | 1,587 (7,060)            | 13.4 (34.0)            | 10,010 [5.0] (45)         | 2.1 (5.4)                      |
| 1H13C10-40-34 | 377 (1,679)              | 36.0 (91.5)            | 15,163 [7.6] (67)         | 1.6 (4.1)                      | 1H13C15-40-34 | 1,562 (6,949)            | 13.4 (34.0)            | 15,163 [7.6] (67)         | 1.5 (3.8)                      |
| 1H13C10-50-34 | 327 (1,457)              | 36.0 (91.5)            | 23,692 [11.8] (105)       | 1.0 (2.7)                      | 1H13C15-50-34 | 1,512 (6,726)            | 13.4 (34.0)            | 23,692 [11.8] (105)       | 1.0 (2.5)                      |
| 1H13C10-60-34 | 302 (1,346)              | 36.0 (91.5)            | 34,117 [17.1] (152)       | 0.7 (1.9)                      | 1H13C15-60-34 | 1,487 (6,615)            | 13.4 (34.0)            | 34,117 [17.1] (152)       | 0.7 (1.8)                      |
| 1H13C10-32-36 | 281 (1,250)              | 45.6 (115.9)           | 7,903 [4.0] (35)          | 3.0 (7.6)                      | 1H13C15-32-36 | 1,216 (5,410)            | 17.0 (43.1)            | 7,903 [4.0] (35)          | 2.7 (6.8)                      |
| 1H13C10-40-36 | 256 (1,138)              | 45.6 (115.9)           | 11,971 [6.0] (53)         | 2.0 (5.2)                      | 1H13C15-40-36 | 1,191 (5,298)            | 17.0 (43.1)            | 11,971 [6.0] (53)         | 1.9 (4.8)                      |
| 1H13C10-50-36 | 206 (916)                | 45.6 (115.9)           | 18,704 [9.4] (83)         | 1.3 (3.4)                      | 1H13C15-50-36 | 1,141 (5,076)            | 17.0 (43.1)            | 18,704 [9.4] (83)         | 1.3 (3.2)                      |
| 1H13C10-60-36 | 181 (805)                | 45.6 (115.9)           | 26,934 [13.5] (120)       | 0.9 (2.4)                      | 1H13C15-60-36 | 1,116 (4,965)            | 17.0 (43.1)            | 26,934 [13.5] (120)       | 0.9 (2.3)                      |
| 1H13C20-32-23 | 6,755 (30,047)           | 2.9 (7.5)              | 24,399 [12.2] (109)       | 1.0 (2.5)                      | 1H13C25-32-23 | 9,895 (44,015)           | 1.8 (4.7)              | 24,399 [12.2] (109)       | 0.7 (1.7)                      |
| 1H13C20-40-23 | 6,730 (29,936)           | 2.9 (7.5)              | 36,960 [18.5] (164)       | 0.7 (1.7)                      | 1H13C25-40-23 | 9,870 (43,904)           | 1.8 (4.7)              | 36,960 [18.5] (164)       | 0.5 (1.3)                      |
| 1H13C20-50-23 | 6,680 (29,714)           | 2.9 (7.5)              | 57,749 [28.9] (257)       | 0.4 (1.1)                      | 1H13C25-50-23 | 9,820 (43,682)           | 1.8 (4.7)              | 57,749 [28.9] (257)       | 0.4 (.9)                       |
| 1H13C20-60-23 | 6,655 (29,603)           | 2.9 (7.5)              | 83,159 [41.6] (370)       | 0.3 (.8)                       | 1H13C25-60-23 | 9,795 (43,571)           | 1.8 (4.7)              | 83,159 [41.6] (370)       | 0.3 (.7)                       |
| 1H13C20-32-27 | 4,982 (22,162)           | 4.0 (10.1)             | 18,157 [9.1] (81)         | 1.3 (3.3)                      | 1H13C25-32-27 | 7,319 (32,557)           | 2.5 (6.3)              | 18,157 [9.1] (81)         | 0.9 (2.3)                      |
| 1H13C20-40-27 | 4,957 (22,051)           | 4.0 (10.1)             | 27,505 [13.8] (122)       | 0.9 (2.2)                      | 1H13C25-40-27 | 7,294 (32,445)           | 2.5 (6.3)              | 27,505 [13.8] (122)       | 0.7 (1.7)                      |
| 1H13C20-50-27 | 4,907 (21,828)           | 4.0 (10.1)             | 42,976 [21.5] (191)       | 0.6 (1.5)                      | 1H13C25-50-27 | 7,244 (32,223)           | 2.5 (6.3)              | 42,976 [21.5] (191)       | 0.5 (1.2)                      |
| 1H13C20-60-27 | 4,882 (21,717)           | 4.0 (10.1)             | 61,886 [30.9] (275)       | 0.4 (1.0)                      | 1H13C25-60-27 | 7,219 (32,112)           | 2.5 (6.3)              | 61,886 [30.9] (275)       | 0.4 (.9)                       |
| 1H13C20-32-31 | 3,584 (15,941)           | 5.4 (13.8)             | 13,233 [6.6] (59)         | 1.4 (3.6)                      | 1H13C25-32-31 | 5,287 (23,517)           | 3.4 (8.7)              | 13,233 [6.6] (59)         | 1.2 (3.1)                      |
| 1H13C20-40-31 | 3,559 (15,829)           | 5.4 (13.8)             | 20,046 [10.0] (89)        | 1.0 (2.6)                      | 1H13C25-40-31 | 5,262 (23,405)           | 3.4 (8.7)              | 20,046 [10.0] (89)        | 0.9 (2.4)                      |
| 1H13C20-50-31 | 3,509 (15,607)           | 5.4 (13.8)             | 31,322 [15.7] (139)       | 0.7 (1.8)                      | 1H13C25-50-31 | 5,212 (23,183)           | 3.4 (8.7)              | 31,322 [15.7] (139)       | 0.7 (1.7)                      |
| 1H13C20-60-31 | 3,484 (15,496)           | 5.4 (13.8)             | 45,103 [22.6] (201)       | 0.5 (1.3)                      | 1H13C25-60-31 | 5,187 (23,072)           | 3.4 (8.7)              | 45,103 [22.6] (201)       | 0.5 (1.2)                      |
| 1H13C20-32-34 | 2,668 (11,868)           | 7.2 (18.3)             | 10,010 [5.0] (45)         | 1.9 (4.8)                      | 1H13C25-32-34 | 3,956 (17,599)           | 4.5 (11.5)             | 10,010 [5.0] (45)         | 1.6 (4.1)                      |
| 1H13C20-40-34 | 2,643 (11,757)           | 7.2 (18.3)             | 15,163 [7.6] (67)         | 1.4 (3.5)                      | 1H13C25-40-34 | 3,931 (17,487)           | 4.5 (11.5)             | 15,163 [7.6] (67)         | 1.2 (3.1)                      |
| 1H13C20-50-34 | 2,593 (11,534)           | 7.2 (18.3)             | 23,692 [11.8] (105)       | 0.9 (2.4)                      | 1H13C25-50-34 | 3,881 (17,265)           | 4.5 (11.5)             | 23,692 [11.8] (105)       | 0.9 (2.2)                      |
| 1H13C20-60-34 | 2,568 (11,423)           | 7.2 (18.3)             | 34,117 [17.1] (152)       | 0.7 (1.7)                      | 1H13C25-60-34 | 3,856 (17,154)           | 4.5 (11.5)             | 34,117 [17.1] (152)       | 0.6 (1.6)                      |
| 1H13C20-32-36 | 2,070 (9,206)            | 9.1 (23.1)             | 7,903 [4.0] (35)          | 2.4 (6.0)                      | 1H13C25-32-36 | 3,087 (13,730)           | 5.7 (14.5)             | 7,903 [4.0] (35)          | 2.1 (5.2)                      |
| 1H13C20-40-36 | 2,045 (9,094)            | 9.1 (23.1)             | 11,971 [6.0] (53)         | 1.7 (4.4)                      | 1H13C25-40-36 | 3,062 (13,618)           | 5.7 (14.5)             | 11,971 [6.0] (53)         | 1.6 (3.9)                      |
| 1H13C20-50-36 | 1,995 (8,872)            | 9.1 (23.1)             | 18,704 [9.4] (83)         | 1.2 (3.0)                      | 1H13C25-50-36 | 3,012 (13,396)           | 5.7 (14.5)             | 18,704 [9.4] (83)         | 1.1 (2.8)                      |
| 1H13C20-60-36 | 1,970 (8,761)            | 9.1 (23.1)             | 26,934 [13.5] (120)       | 0.9 (2.2)                      | 1H13C25-60-36 | 2,987 (13,285)           | 5.7 (14.5)             | 26,934 [13.5] (120)       | 0.8 (2.1)                      |

**H-Series - HSHF -- Single HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 1H14C10-32-23 | 1,261 (5,608)            | 14.8 (37.5)            | 24,887 [12.4] (111)       | 1.0 (2.5)                      | 1H14C15-32-23 | 4,206 (18,709)           | 5.5 (14.0)             | 24,887 [12.4] (111)       | 0.9 (2.2)                      |
| 1H14C10-40-23 | 1,236 (5,497)            | 14.8 (37.5)            | 37,699 [18.8] (168)       | 0.7 (1.7)                      | 1H14C15-40-23 | 4,181 (18,598)           | 5.5 (14.0)             | 37,699 [18.8] (168)       | 0.6 (1.6)                      |
| 1H14C10-50-23 | 1,186 (5,275)            | 14.8 (37.5)            | 58,905 [29.5] (262)       | 0.4 (1.1)                      | 1H14C15-50-23 | 4,131 (18,376)           | 5.5 (14.0)             | 58,905 [29.5] (262)       | 0.4 (1.0)                      |
| 1H14C10-60-23 | 1,161 (5,164)            | 14.8 (37.5)            | 84,823 [42.4] (377)       | 0.3 (.8)                       | 1H14C15-60-23 | 4,106 (18,265)           | 5.5 (14.0)             | 84,823 [42.4] (377)       | 0.3 (.7)                       |
| 1H14C10-32-27 | 1,158 (5,152)            | 19.9 (50.4)            | 23,110 [11.6] (103)       | 1.3 (3.3)                      | 1H14C15-32-27 | 3,893 (17,317)           | 7.4 (18.8)             | 23,110 [11.6] (103)       | 1.2 (3.0)                      |
| 1H14C10-40-27 | 1,133 (5,041)            | 19.9 (50.4)            | 35,006 [17.5] (156)       | 0.9 (2.2)                      | 1H14C15-40-27 | 3,868 (17,206)           | 7.4 (18.8)             | 35,006 [17.5] (156)       | 0.8 (2.1)                      |
| 1H14C10-50-27 | 1,083 (4,819)            | 19.9 (50.4)            | 54,697 [27.3] (243)       | 0.6 (1.5)                      | 1H14C15-50-27 | 3,818 (16,984)           | 7.4 (18.8)             | 54,697 [27.3] (243)       | 0.6 (1.4)                      |
| 1H14C10-60-27 | 1,058 (4,707)            | 19.9 (50.4)            | 78,764 [39.4] (350)       | 0.4 (1.0)                      | 1H14C15-60-27 | 3,793 (16,873)           | 7.4 (18.8)             | 78,764 [39.4] (350)       | 0.4 (1.0)                      |
| 1H14C10-32-31 | 797 (3,544)              | 27.2 (69.2)            | 16,843 [8.4] (75)         | 1.8 (4.5)                      | 1H14C15-32-31 | 2,790 (12,410)           | 10.1 (25.7)            | 16,843 [8.4] (75)         | 1.6 (4.1)                      |
| 1H14C10-40-31 | 772 (3,433)              | 27.2 (69.2)            | 25,513 [12.8] (113)       | 1.2 (3.1)                      | 1H14C15-40-31 | 2,765 (12,299)           | 10.1 (25.7)            | 25,513 [12.8] (113)       | 1.1 (2.9)                      |
| 1H14C10-50-31 | 722 (3,210)              | 27.2 (69.2)            | 39,864 [19.9] (177)       | 0.8 (2.0)                      | 1H14C15-50-31 | 2,715 (12,076)           | 10.1 (25.7)            | 39,864 [19.9] (177)       | 0.8 (1.9)                      |
| 1H14C10-60-31 | 697 (3,099)              | 27.2 (69.2)            | 57,404 [28.7] (255)       | 0.6 (1.4)                      | 1H14C15-60-31 | 2,690 (11,965)           | 10.1 (25.7)            | 57,404 [28.7] (255)       | 0.5 (1.4)                      |
| 1H14C10-32-34 | 560 (2,491)              | 36.0 (91.5)            | 12,740 [6.4] (57)         | 2.4 (6.0)                      | 1H14C15-32-34 | 2,068 (9,197)            | 13.4 (34.0)            | 12,740 [6.4] (57)         | 2.1 (5.4)                      |
| 1H14C10-40-34 | 535 (2,380)              | 36.0 (91.5)            | 19,298 [9.6] (86)         | 1.6 (4.1)                      | 1H14C15-40-34 | 2,043 (9,086)            | 13.4 (34.0)            | 19,298 [9.6] (86)         | 1.5 (3.8)                      |
| 1H14C10-50-34 | 485 (2,157)              | 36.0 (91.5)            | 30,154 [15.1] (134)       | 1.0 (2.7)                      | 1H14C15-50-34 | 1,993 (8,864)            | 13.4 (34.0)            | 30,154 [15.1] (134)       | 1.0 (2.5)                      |
| 1H14C10-60-34 | 460 (2,046)              | 36.0 (91.5)            | 43,421 [21.7] (193)       | 0.7 (1.9)                      | 1H14C15-60-34 | 1,968 (8,753)            | 13.4 (34.0)            | 43,421 [21.7] (193)       | 0.7 (1.8)                      |
| 1H14C10-32-36 | 405 (1,803)              | 45.6 (115.9)           | 10,058 [5.0] (45)         | 3.0 (7.6)                      | 1H14C15-32-36 | 1,596 (7,097)            | 17.0 (43.1)            | 10,058 [5.0] (45)         | 2.7 (6.8)                      |
| 1H14C10-40-36 | 380 (1,691)              | 45.6 (115.9)           | 15,235 [7.6] (68)         | 2.0 (5.2)                      | 1H14C15-40-36 | 1,571 (6,986)            | 17.0 (43.1)            | 15,235 [7.6] (68)         | 1.9 (4.8)                      |
| 1H14C10-50-36 | 330 (1,469)              | 45.6 (115.9)           | 23,805 [11.9] (106)       | 1.3 (3.4)                      | 1H14C15-50-36 | 1,521 (6,764)            | 17.0 (43.1)            | 23,805 [11.9] (106)       | 1.3 (3.2)                      |
| 1H14C10-60-36 | 305 (1,358)              | 45.6 (115.9)           | 34,280 [17.1] (152)       | 0.9 (2.4)                      | 1H14C15-60-36 | 1,496 (6,652)            | 17.0 (43.1)            | 34,280 [17.1] (152)       | 0.9 (2.3)                      |
| 1H14C20-32-23 | 6,894 (30,664)           | 2.9 (7.5)              | 24,887 [12.4] (111)       | 1.0 (2.5)                      | 1H14C25-32-23 | 10,097 (44,912)          | 1.8 (4.7)              | 24,887 [12.4] (111)       | 0.7 (1.7)                      |
| 1H14C20-40-23 | 6,869 (30,553)           | 2.9 (7.5)              | 37,699 [18.8] (168)       | 0.7 (1.7)                      | 1H14C25-40-23 | 10,072 (44,800)          | 1.8 (4.7)              | 37,699 [18.8] (168)       | 0.5 (1.3)                      |
| 1H14C20-50-23 | 6,819 (30,331)           | 2.9 (7.5)              | 58,905 [29.5] (262)       | 0.4 (1.1)                      | 1H14C25-50-23 | 10,022 (44,578)          | 1.8 (4.7)              | 58,905 [29.5] (262)       | 0.4 (.9)                       |
| 1H14C20-60-23 | 6,794 (30,219)           | 2.9 (7.5)              | 84,823 [42.4] (377)       | 0.3 (.8)                       | 1H14C25-60-23 | 9,997 (44,467)           | 1.8 (4.7)              | 84,823 [42.4] (377)       | 0.3 (.7)                       |
| 1H14C20-32-27 | 6,389 (28,418)           | 4.0 (10.1)             | 23,110 [11.6] (103)       | 1.3 (3.3)                      | 1H14C25-32-27 | 9,363 (41,648)           | 2.5 (6.3)              | 23,110 [11.6] (103)       | 0.9 (2.3)                      |
| 1H14C20-40-27 | 6,364 (28,307)           | 4.0 (10.1)             | 35,006 [17.5] (156)       | 0.9 (2.2)                      | 1H14C25-40-27 | 9,338 (41,537)           | 2.5 (6.3)              | 35,006 [17.5] (156)       | 0.7 (1.7)                      |
| 1H14C20-50-27 | 6,314 (28,085)           | 4.0 (10.1)             | 54,697 [27.3] (243)       | 0.6 (1.5)                      | 1H14C25-50-27 | 9,288 (41,314)           | 2.5 (6.3)              | 54,697 [27.3] (243)       | 0.5 (1.2)                      |
| 1H14C20-60-27 | 6,289 (27,973)           | 4.0 (10.1)             | 78,764 [39.4] (350)       | 0.4 (1.0)                      | 1H14C25-60-27 | 9,263 (41,203)           | 2.5 (6.3)              | 78,764 [39.4] (350)       | 0.4 (.9)                       |
| 1H14C20-32-31 | 4,609 (20,500)           | 5.4 (13.8)             | 16,843 [8.4] (75)         | 1.4 (3.6)                      | 1H14C25-32-31 | 6,776 (30,142)           | 3.4 (8.7)              | 16,843 [8.4] (75)         | 1.2 (3.1)                      |
| 1H14C20-40-31 | 4,584 (20,389)           | 5.4 (13.8)             | 25,513 [12.8] (113)       | 1.0 (2.6)                      | 1H14C25-40-31 | 6,751 (30,031)           | 3.4 (8.7)              | 25,513 [12.8] (113)       | 0.9 (2.4)                      |
| 1H14C20-50-31 | 4,534 (20,167)           | 5.4 (13.8)             | 39,864 [19.9] (177)       | 0.7 (1.8)                      | 1H14C25-50-31 | 6,701 (29,809)           | 3.4 (8.7)              | 39,864 [19.9] (177)       | 0.7 (1.7)                      |
| 1H14C20-60-31 | 4,509 (20,056)           | 5.4 (13.8)             | 57,404 [28.7] (255)       | 0.5 (1.3)                      | 1H14C25-60-31 | 6,676 (29,698)           | 3.4 (8.7)              | 57,404 [28.7] (255)       | 0.5 (1.2)                      |
| 1H14C20-32-34 | 3,443 (15,317)           | 7.2 (18.3)             | 12,740 [6.4] (57)         | 1.9 (4.8)                      | 1H14C25-32-34 | 5,083 (22,610)           | 4.5 (11.5)             | 12,740 [6.4] (57)         | 1.6 (4.1)                      |
| 1H14C20-40-34 | 3,418 (15,206)           | 7.2 (18.3)             | 19,298 [9.6] (86)         | 1.4 (3.5)                      | 1H14C25-40-34 | 5,058 (22,499)           | 4.5 (11.5)             | 19,298 [9.6] (86)         | 1.2 (3.1)                      |
| 1H14C20-50-34 | 3,368 (14,983)           | 7.2 (18.3)             | 30,154 [15.1] (134)       | 0.9 (2.4)                      | 1H14C25-50-34 | 5,008 (22,277)           | 4.5 (11.5)             | 30,154 [15.1] (134)       | 0.9 (2.2)                      |
| 1H14C20-60-34 | 3,343 (14,872)           | 7.2 (18.3)             | 43,421 [21.7] (193)       | 0.7 (1.7)                      | 1H14C25-60-34 | 4,983 (22,166)           | 4.5 (11.5)             | 43,421 [21.7] (193)       | 0.6 (1.6)                      |
| 1H14C20-32-36 | 2,682 (11,929)           | 9.1 (23.1)             | 10,058 [5.0] (45)         | 2.4 (6.0)                      | 1H14C25-32-36 | 3,976 (17,686)           | 5.7 (14.5)             | 10,058 [5.0] (45)         | 2.1 (5.2)                      |
| 1H14C20-40-36 | 2,657 (11,817)           | 9.1 (23.1)             | 15,235 [7.6] (68)         | 1.7 (4.4)                      | 1H14C25-40-36 | 3,951 (17,575)           | 5.7 (14.5)             | 15,235 [7.6] (68)         | 1.6 (3.9)                      |
| 1H14C20-50-36 | 2,607 (11,595)           | 9.1 (23.1)             | 23,805 [11.9] (106)       | 1.2 (3.0)                      | 1H14C25-50-36 | 3,901 (17,353)           | 5.7 (14.5)             | 23,805 [11.9] (106)       | 1.1 (2.8)                      |
| 1H14C20-60-36 | 2,582 (11,484)           | 9.1 (23.1)             | 34,280 [17.1] (152)       | 0.9 (2.2)                      | 1H14C25-60-36 | 3,876 (17,242)           | 5.7 (14.5)             | 34,280 [17.1] (152)       | 0.8 (2.1)                      |

H-Series - HSHF -- Single HF Cylinder

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 1H17C10-32-23 | 1,261 (5,608)            | 9.8 (25.0)             | 24,887 [12.4] (111)       | 1.0 (2.5)                      | 1H17C15-32-23 | 4,206 (18,709)           | 3.7 (9.3)              | 24,887 [12.4] (111)       | 0.6 (1.5)                      |
| 1H17C10-40-23 | 1,236 (5,497)            | 9.8 (25.0)             | 37,699 [18.8] (168)       | 0.7 (1.7)                      | 1H17C15-40-23 | 4,181 (18,598)           | 3.7 (9.3)              | 37,699 [18.8] (168)       | 0.4 (1.0)                      |
| 1H17C10-50-23 | 1,186 (5,275)            | 9.8 (25.0)             | 58,905 [29.5] (262)       | 0.4 (1.1)                      | 1H17C15-50-23 | 4,131 (18,376)           | 3.7 (9.3)              | 58,905 [29.5] (262)       | 0.3 (.7)                       |
| 1H17C10-60-23 | 1,161 (5,164)            | 9.8 (25.0)             | 84,823 [42.4] (377)       | 0.3 (.8)                       | 1H17C15-60-23 | 4,106 (18,265)           | 3.7 (9.3)              | 84,823 [42.4] (377)       | 0.2 (.5)                       |
| 1H17C10-32-27 | 1,261 (5,608)            | 13.2 (33.6)            | 24,887 [12.4] (111)       | 1.3 (3.3)                      | 1H17C15-32-27 | 4,206 (18,709)           | 4.9 (12.5)             | 24,887 [12.4] (111)       | 0.8 (2.0)                      |
| 1H17C10-40-27 | 1,236 (5,497)            | 13.2 (33.6)            | 37,699 [18.8] (168)       | 0.9 (2.2)                      | 1H17C15-40-27 | 4,181 (18,598)           | 4.9 (12.5)             | 37,699 [18.8] (168)       | 0.5 (1.4)                      |
| 1H17C10-50-27 | 1,186 (5,275)            | 13.2 (33.6)            | 58,905 [29.5] (262)       | 0.6 (1.5)                      | 1H17C15-50-27 | 4,131 (18,376)           | 4.9 (12.5)             | 58,905 [29.5] (262)       | 0.4 (.9)                       |
| 1H17C10-60-27 | 1,161 (5,164)            | 13.2 (33.6)            | 84,823 [42.4] (377)       | 0.4 (1.0)                      | 1H17C15-60-27 | 4,106 (18,265)           | 4.9 (12.5)             | 84,823 [42.4] (377)       | 0.3 (.7)                       |
| 1H17C10-32-31 | 1,261 (5,608)            | 18.2 (46.1)            | 24,887 [12.4] (111)       | 1.8 (4.5)                      | 1H17C15-32-31 | 4,206 (18,709)           | 6.8 (17.2)             | 24,887 [12.4] (111)       | 1.1 (2.7)                      |
| 1H17C10-40-31 | 1,236 (5,497)            | 18.2 (46.1)            | 37,699 [18.8] (168)       | 1.2 (3.1)                      | 1H17C15-40-31 | 4,181 (18,598)           | 6.8 (17.2)             | 37,699 [18.8] (168)       | 0.8 (1.9)                      |
| 1H17C10-50-31 | 1,186 (5,275)            | 18.2 (46.1)            | 58,905 [29.5] (262)       | 0.8 (2.0)                      | 1H17C15-50-31 | 4,131 (18,376)           | 6.8 (17.2)             | 58,905 [29.5] (262)       | 0.5 (1.3)                      |
| 1H17C10-60-31 | 1,161 (5,164)            | 18.2 (46.1)            | 84,823 [42.4] (377)       | 0.6 (1.4)                      | 1H17C15-60-31 | 4,106 (18,265)           | 6.8 (17.2)             | 84,823 [42.4] (377)       | 0.4 (.9)                       |
| 1H17C10-32-34 | 1,261 (5,608)            | 24.0 (61.0)            | 22,540 [11.3] (100)       | 2.4 (6.0)                      | 1H17C15-32-34 | 3,793 (16,871)           | 8.9 (22.7)             | 22,540 [11.3] (100)       | 1.4 (3.6)                      |
| 1H17C10-40-34 | 1,236 (5,497)            | 24.0 (61.0)            | 34,143 [17.1] (152)       | 1.6 (4.1)                      | 1H17C15-40-34 | 3,768 (16,760)           | 8.9 (22.7)             | 34,143 [17.1] (152)       | 1.0 (2.5)                      |
| 1H17C10-50-34 | 1,186 (5,275)            | 24.0 (61.0)            | 53,349 [26.7] (237)       | 1.0 (2.7)                      | 1H17C15-50-34 | 3,718 (16,538)           | 8.9 (22.7)             | 53,349 [26.7] (237)       | 0.7 (1.7)                      |
| 1H17C10-60-34 | 1,161 (5,164)            | 24.0 (61.0)            | 76,822 [38.4] (342)       | 0.7 (1.9)                      | 1H17C15-60-34 | 3,693 (16,426)           | 8.9 (22.7)             | 76,822 [38.4] (342)       | 0.5 (1.2)                      |
| 1H17C10-32-36 | 1,261 (5,608)            | 30.4 (77.2)            | 17,795 [8.9] (79)         | 3.0 (7.6)                      | 1H17C15-32-36 | 2,957 (13,155)           | 11.3 (28.7)            | 17,795 [8.9] (79)         | 1.8 (4.6)                      |
| 1H17C10-40-36 | 1,236 (5,497)            | 45.6 (115.9)           | 26,955 [13.5] (120)       | 2.0 (5.2)                      | 1H17C15-40-36 | 2,932 (13,044)           | 11.3 (28.7)            | 26,955 [13.5] (120)       | 1.3 (3.2)                      |
| 1H17C10-50-36 | 1,186 (5,275)            | 45.6 (115.9)           | 42,117 [21.1] (187)       | 1.3 (3.4)                      | 1H17C15-50-36 | 2,882 (12,822)           | 11.3 (28.7)            | 42,117 [21.1] (187)       | 0.8 (2.1)                      |
| 1H17C10-60-36 | 1,161 (5,164)            | 45.6 (115.9)           | 60,649 [30.3] (270)       | 0.9 (2.4)                      | 1H17C15-60-36 | 2,857 (12,711)           | 11.3 (28.7)            | 60,649 [30.3] (270)       | 0.6 (1.5)                      |
| 1H17C20-32-23 | 6,894 (30,664)           | 2.0 (5.0)              | 24,887 [12.4] (111)       | 1.0 (2.5)                      | 1H17C25-32-23 | 10,097 (44,912)          | 1.2 (3.1)              | 24,887 [12.4] (111)       | 0.4 (1.1)                      |
| 1H17C20-40-23 | 6,869 (30,553)           | 2.0 (5.0)              | 37,699 [18.8] (168)       | 0.7 (1.7)                      | 1H17C25-40-23 | 10,072 (44,800)          | 1.2 (3.1)              | 37,699 [18.8] (168)       | 0.3 (.9)                       |
| 1H17C20-50-23 | 6,819 (30,331)           | 2.0 (5.0)              | 58,905 [29.5] (262)       | 0.4 (1.1)                      | 1H17C25-50-23 | 10,022 (44,578)          | 1.2 (3.1)              | 58,905 [29.5] (262)       | 0.2 (.6)                       |
| 1H17C20-60-23 | 6,794 (30,219)           | 2.0 (5.0)              | 84,823 [42.4] (377)       | 0.3 (.8)                       | 1H17C25-60-23 | 9,997 (44,467)           | 1.2 (3.1)              | 84,823 [42.4] (377)       | 0.2 (.4)                       |
| 1H17C20-32-27 | 6,894 (30,664)           | 2.6 (6.7)              | 24,887 [12.4] (111)       | 1.3 (3.3)                      | 1H17C25-32-27 | 10,097 (44,912)          | 1.7 (4.2)              | 24,887 [12.4] (111)       | 0.6 (1.5)                      |
| 1H17C20-40-27 | 6,869 (30,553)           | 2.6 (6.7)              | 37,699 [18.8] (168)       | 0.9 (2.2)                      | 1H17C25-40-27 | 10,072 (44,800)          | 1.7 (4.2)              | 37,699 [18.8] (168)       | 0.5 (1.1)                      |
| 1H17C20-50-27 | 6,819 (30,331)           | 2.6 (6.7)              | 58,905 [29.5] (262)       | 0.6 (1.5)                      | 1H17C25-50-27 | 10,022 (44,578)          | 1.7 (4.2)              | 58,905 [29.5] (262)       | 0.3 (.8)                       |
| 1H17C20-60-27 | 6,794 (30,219)           | 2.6 (6.7)              | 84,823 [42.4] (377)       | 0.4 (1.0)                      | 1H17C25-60-27 | 9,997 (44,467)           | 1.7 (4.2)              | 84,823 [42.4] (377)       | 0.2 (.6)                       |
| 1H17C20-32-31 | 6,894 (30,664)           | 3.6 (9.2)              | 24,887 [12.4] (111)       | .9 (2.4)                       | 1H17C25-32-31 | 10,097 (44,912)          | 2.3 (5.8)              | 24,887 [12.4] (111)       | 0.8 (2.1)                      |
| 1H17C20-40-31 | 6,869 (30,553)           | 3.6 (9.2)              | 37,699 [18.8] (168)       | .7 (1.7)                       | 1H17C25-40-31 | 10,072 (44,800)          | 2.3 (5.8)              | 37,699 [18.8] (168)       | 0.6 (1.6)                      |
| 1H17C20-50-31 | 6,819 (30,331)           | 3.6 (9.2)              | 58,905 [29.5] (262)       | 0.5 (1.2)                      | 1H17C25-50-31 | 10,022 (44,578)          | 2.3 (5.8)              | 58,905 [29.5] (262)       | 0.4 (1.1)                      |
| 1H17C20-60-31 | 6,794 (30,219)           | 3.6 (9.2)              | 84,823 [42.4] (377)       | 0.3 (.9)                       | 1H17C25-60-31 | 9,997 (44,467)           | 2.3 (5.8)              | 84,823 [42.4] (377)       | 0.3 (.8)                       |
| 1H17C20-32-34 | 6,227 (27,698)           | 4.8 (12.2)             | 22,540 [11.3] (100)       | 1.2 (3.2)                      | 1H17C25-32-34 | 9,128 (40,602)           | 3.0 (7.6)              | 22,540 [11.3] (100)       | 1.1 (2.7)                      |
| 1H17C20-40-34 | 6,202 (27,587)           | 4.8 (12.2)             | 34,143 [17.1] (152)       | .9 (2.3)                       | 1H17C25-40-34 | 9,103 (40,491)           | 3.0 (7.6)              | 34,143 [17.1] (152)       | .8 (2.1)                       |
| 1H17C20-50-34 | 6,152 (27,365)           | 4.8 (12.2)             | 53,349 [26.7] (237)       | 0.6 (1.6)                      | 1H17C25-50-34 | 9,053 (40,268)           | 3.0 (7.6)              | 53,349 [26.7] (237)       | 0.6 (1.5)                      |
| 1H17C20-60-34 | 6,127 (27,253)           | 4.8 (12.2)             | 76,822 [38.4] (342)       | 0.5 (1.2)                      | 1H17C25-60-34 | 9,028 (40,157)           | 3.0 (7.6)              | 76,822 [38.4] (342)       | 0.4 (1.1)                      |
| 1H17C20-32-36 | 4,879 (21,703)           | 6.1 (15.4)             | 17,795 [8.9] (79)         | 1.6 (4.0)                      | 1H17C25-32-36 | 7,169 (31,890)           | 3.8 (9.7)              | 17,795 [8.9] (79)         | 1.4 (3.5)                      |
| 1H17C20-40-36 | 4,854 (21,592)           | 9.1 (23.1)             | 26,955 [13.5] (120)       | 1.7 (4.4)                      | 1H17C25-40-36 | 7,144 (31,779)           | 3.8 (9.7)              | 26,955 [13.5] (120)       | 1.0 (2.6)                      |
| 1H17C20-50-36 | 4,804 (21,370)           | 9.1 (23.1)             | 42,117 [21.1] (187)       | 1.2 (3.0)                      | 1H17C25-50-36 | 7,094 (31,557)           | 3.8 (9.7)              | 42,117 [21.1] (187)       | 0.7 (1.9)                      |
| 1H17C20-60-36 | 4,779 (21,258)           | 9.1 (23.1)             | 60,649 [30.3] (270)       | 0.9 (2.2)                      | 1H17C25-60-36 | 7,069 (31,445)           | 3.8 (9.7)              | 60,649 [30.3] (270)       | 0.5 (1.4)                      |

H-Series - HSHF -- Single HF Cylinder

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 1H19C10-32-23 | 1,261 (5,608)            | 14.8 (37.5)            | 24,887 [12.4] (111)       | 1.0 (2.5)                      | 1H19C15-32-23 | 4,206 (18,709)           | 5.5 (14.0)             | 24,887 [12.4] (111)       | 0.9 (2.2)                      |
| 1H19C10-40-23 | 1,236 (5,497)            | 14.8 (37.5)            | 37,699 [18.8] (168)       | 0.7 (1.7)                      | 1H19C15-40-23 | 4,181 (18,598)           | 5.5 (14.0)             | 37,699 [18.8] (168)       | 0.6 (1.6)                      |
| 1H19C10-50-23 | 1,186 (5,275)            | 14.8 (37.5)            | 58,905 [29.5] (262)       | 0.4 (1.1)                      | 1H19C15-50-23 | 4,131 (18,376)           | 5.5 (14.0)             | 58,905 [29.5] (262)       | 0.4 (1.0)                      |
| 1H19C10-60-23 | 1,161 (5,164)            | 14.8 (37.5)            | 84,823 [42.4] (377)       | 0.3 (.8)                       | 1H19C15-60-23 | 4,106 (18,265)           | 5.5 (14.0)             | 84,823 [42.4] (377)       | 0.3 (.7)                       |
| 1H19C10-32-27 | 1,261 (5,608)            | 19.9 (50.4)            | 24,887 [12.4] (111)       | 1.3 (3.3)                      | 1H19C15-32-27 | 4,206 (18,709)           | 7.4 (18.8)             | 24,887 [12.4] (111)       | 1.2 (3.0)                      |
| 1H19C10-40-27 | 1,236 (5,497)            | 19.9 (50.4)            | 37,699 [18.8] (168)       | 0.9 (2.2)                      | 1H19C15-40-27 | 4,181 (18,598)           | 7.4 (18.8)             | 37,699 [18.8] (168)       | 0.8 (2.1)                      |
| 1H19C10-50-27 | 1,186 (5,275)            | 19.9 (50.4)            | 58,905 [29.5] (262)       | 0.6 (1.5)                      | 1H19C15-50-27 | 4,131 (18,376)           | 7.4 (18.8)             | 58,905 [29.5] (262)       | 0.6 (1.4)                      |
| 1H19C10-60-27 | 1,161 (5,164)            | 19.9 (50.4)            | 84,823 [42.4] (377)       | 0.4 (1.0)                      | 1H19C15-60-27 | 4,106 (18,265)           | 7.4 (18.8)             | 84,823 [42.4] (377)       | 0.4 (1.0)                      |
| 1H19C10-32-31 | 1,261 (5,608)            | 27.2 (69.2)            | 24,887 [12.4] (111)       | 1.8 (4.5)                      | 1H19C15-32-31 | 4,206 (18,709)           | 10.1 (25.7)            | 24,887 [12.4] (111)       | 1.6 (4.1)                      |
| 1H19C10-40-31 | 1,236 (5,497)            | 27.2 (69.2)            | 37,699 [18.8] (168)       | 1.2 (3.1)                      | 1H19C15-40-31 | 4,181 (18,598)           | 10.1 (25.7)            | 37,699 [18.8] (168)       | 1.1 (2.9)                      |
| 1H19C10-50-31 | 1,186 (5,275)            | 27.2 (69.2)            | 58,905 [29.5] (262)       | 0.8 (2.0)                      | 1H19C15-50-31 | 4,131 (18,376)           | 10.1 (25.7)            | 58,905 [29.5] (262)       | 0.8 (1.9)                      |
| 1H19C10-60-31 | 1,161 (5,164)            | 27.2 (69.2)            | 84,823 [42.4] (377)       | 0.6 (1.4)                      | 1H19C15-60-31 | 4,106 (18,265)           | 10.1 (25.7)            | 84,823 [42.4] (377)       | 0.5 (1.4)                      |
| 1H19C10-32-34 | 1,206 (5,365)            | 36.0 (91.5)            | 23,940 [12.0] (106)       | 2.4 (6.0)                      | 1H19C15-32-34 | 4,039 (17,967)           | 13.4 (34.0)            | 23,940 [12.0] (106)       | 2.1 (5.4)                      |
| 1H19C10-40-34 | 1,181 (5,254)            | 36.0 (91.5)            | 36,264 [18.1] (161)       | 1.6 (4.1)                      | 1H19C15-40-34 | 4,014 (17,856)           | 13.4 (34.0)            | 36,264 [18.1] (161)       | 1.5 (3.8)                      |
| 1H19C10-50-34 | 1,131 (5,032)            | 36.0 (91.5)            | 56,662 [28.3] (252)       | 1.0 (2.7)                      | 1H19C15-50-34 | 3,964 (17,634)           | 13.4 (34.0)            | 56,662 [28.3] (252)       | 1.0 (2.5)                      |
| 1H19C10-60-34 | 1,106 (4,920)            | 36.0 (91.5)            | 81,593 [40.8] (363)       | 0.7 (1.9)                      | 1H19C15-60-34 | 3,939 (17,523)           | 13.4 (34.0)            | 81,593 [40.8] (363)       | 0.7 (1.8)                      |
| 1H19C10-32-36 | 915 (4,072)              | 45.6 (115.9)           | 18,900 [9.4] (84)         | 3.0 (7.6)                      | 1H19C15-32-36 | 3,152 (14,021)           | 17.0 (43.1)            | 18,900 [9.4] (84)         | 2.7 (6.8)                      |
| 1H19C10-40-36 | 890 (3,961)              | 45.6 (115.9)           | 28,629 [14.3] (127)       | 2.0 (5.2)                      | 1H19C15-40-36 | 3,127 (13,910)           | 17.0 (43.1)            | 28,629 [14.3] (127)       | 1.9 (4.8)                      |
| 1H19C10-50-36 | 840 (3,738)              | 45.6 (115.9)           | 44,733 [22.4] (199)       | 1.3 (3.4)                      | 1H19C15-50-36 | 3,077 (13,687)           | 17.0 (43.1)            | 44,733 [22.4] (199)       | 1.3 (3.2)                      |
| 1H19C10-60-36 | 815 (3,627)              | 45.6 (115.9)           | 64,416 [32.2] (287)       | 0.9 (2.4)                      | 1H19C15-60-36 | 3,052 (13,576)           | 17.0 (43.1)            | 64,416 [32.2] (287)       | 0.9 (2.3)                      |
| 1H19C20-32-23 | 6,894 (30,664)           | 2.9 (7.5)              | 24,887 [12.4] (111)       | 1.0 (2.5)                      | 1H19C25-32-23 | 10,097 (44,912)          | 1.8 (4.7)              | 24,887 [12.4] (111)       | 0.7 (1.7)                      |
| 1H19C20-40-23 | 6,869 (30,553)           | 2.9 (7.5)              | 37,699 [18.8] (168)       | 0.7 (1.7)                      | 1H19C25-40-23 | 10,072 (44,800)          | 1.8 (4.7)              | 37,699 [18.8] (168)       | 0.5 (1.3)                      |
| 1H19C20-50-23 | 6,819 (30,331)           | 2.9 (7.5)              | 58,905 [29.5] (262)       | 0.4 (1.1)                      | 1H19C25-50-23 | 10,022 (44,578)          | 1.8 (4.7)              | 58,905 [29.5] (262)       | 0.4 (.9)                       |
| 1H19C20-60-23 | 6,794 (30,219)           | 2.9 (7.5)              | 84,823 [42.4] (377)       | 0.3 (.8)                       | 1H19C25-60-23 | 9,997 (44,467)           | 1.8 (4.7)              | 84,823 [42.4] (377)       | 0.3 (.7)                       |
| 1H19C20-32-27 | 6,894 (30,664)           | 4.0 (10.1)             | 24,887 [12.4] (111)       | 1.3 (3.3)                      | 1H19C25-32-27 | 10,097 (44,912)          | 2.5 (6.3)              | 24,887 [12.4] (111)       | 0.9 (2.3)                      |
| 1H19C20-40-27 | 6,869 (30,553)           | 4.0 (10.1)             | 37,699 [18.8] (168)       | 0.9 (2.2)                      | 1H19C25-40-27 | 10,072 (44,800)          | 2.5 (6.3)              | 37,699 [18.8] (168)       | 0.7 (1.7)                      |
| 1H19C20-50-27 | 6,819 (30,331)           | 4.0 (10.1)             | 58,905 [29.5] (262)       | 0.6 (1.5)                      | 1H19C25-50-27 | 10,022 (44,578)          | 2.5 (6.3)              | 58,905 [29.5] (262)       | 0.5 (1.2)                      |
| 1H19C20-60-27 | 6,794 (30,219)           | 4.0 (10.1)             | 84,823 [42.4] (377)       | 0.4 (1.0)                      | 1H19C25-60-27 | 9,997 (44,467)           | 2.5 (6.3)              | 84,823 [42.4] (377)       | 0.4 (.9)                       |
| 1H19C20-32-31 | 6,894 (30,664)           | 5.4 (13.8)             | 24,887 [12.4] (111)       | 1.4 (3.6)                      | 1H19C25-32-31 | 10,097 (44,912)          | 3.4 (8.7)              | 24,887 [12.4] (111)       | 1.2 (3.1)                      |
| 1H19C20-40-31 | 6,869 (30,553)           | 5.4 (13.8)             | 37,699 [18.8] (168)       | 1.0 (2.6)                      | 1H19C25-40-31 | 10,072 (44,800)          | 3.4 (8.7)              | 37,699 [18.8] (168)       | 0.9 (2.4)                      |
| 1H19C20-50-31 | 6,819 (30,331)           | 5.4 (13.8)             | 58,905 [29.5] (262)       | 0.7 (1.8)                      | 1H19C25-50-31 | 10,022 (44,578)          | 3.4 (8.7)              | 58,905 [29.5] (262)       | 0.7 (1.7)                      |
| 1H19C20-60-31 | 6,794 (30,219)           | 5.4 (13.8)             | 84,823 [42.4] (377)       | 0.5 (1.3)                      | 1H19C25-60-31 | 9,997 (44,467)           | 3.4 (8.7)              | 84,823 [42.4] (377)       | 0.5 (1.2)                      |
| 1H19C20-32-34 | 6,624 (29,467)           | 7.2 (18.3)             | 23,940 [12.0] (106)       | 1.9 (4.8)                      | 1H19C25-32-34 | 9,705 (43,172)           | 4.5 (11.5)             | 23,940 [12.0] (106)       | 1.6 (4.1)                      |
| 1H19C20-40-34 | 6,599 (29,356)           | 7.2 (18.3)             | 36,264 [18.1] (161)       | 1.4 (3.5)                      | 1H19C25-40-34 | 9,680 (43,061)           | 4.5 (11.5)             | 36,264 [18.1] (161)       | 1.2 (3.1)                      |
| 1H19C20-50-34 | 6,549 (29,133)           | 7.2 (18.3)             | 56,662 [28.3] (252)       | 0.9 (2.4)                      | 1H19C25-50-34 | 9,630 (42,838)           | 4.5 (11.5)             | 56,662 [28.3] (252)       | 0.9 (2.2)                      |
| 1H19C20-60-34 | 6,524 (29,022)           | 7.2 (18.3)             | 81,593 [40.8] (363)       | 0.7 (1.7)                      | 1H19C25-60-34 | 9,605 (42,727)           | 4.5 (11.5)             | 81,593 [40.8] (363)       | 0.6 (1.6)                      |
| 1H19C20-32-36 | 5,193 (23,100)           | 9.1 (23.1)             | 18,900 [9.4] (84)         | 2.4 (6.0)                      | 1H19C25-32-36 | 7,625 (33,919)           | 5.7 (14.5)             | 18,900 [9.4] (84)         | 2.1 (5.2)                      |
| 1H19C20-40-36 | 5,168 (22,988)           | 9.1 (23.1)             | 28,629 [14.3] (127)       | 1.7 (4.4)                      | 1H19C25-40-36 | 7,600 (33,808)           | 5.7 (14.5)             | 28,629 [14.3] (127)       | 1.6 (3.9)                      |
| 1H19C20-50-36 | 5,118 (22,766)           | 9.1 (23.1)             | 44,733 [22.4] (199)       | 1.2 (3.0)                      | 1H19C25-50-36 | 7,550 (33,586)           | 5.7 (14.5)             | 44,733 [22.4] (199)       | 1.1 (2.8)                      |
| 1H19C20-60-36 | 5,093 (22,655)           | 9.1 (23.1)             | 64,416 [32.2] (287)       | 0.9 (2.2)                      | 1H19C25-60-36 | 7,525 (33,474)           | 5.7 (14.5)             | 64,416 [32.2] (287)       | 0.8 (2.1)                      |

**H-Series - HSHF -- Double HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 2H12C10-32-23 | 947 (4,213)              | 14.8 (37.5)            | 38,902 [19.5] (173)       | 1.0 (2.5)                      | 2H12C15-32-23 | 3,249 (14,453)           | 5.5 (14.0)             | 38,902 [19.5] (173)       | 0.9 (2.2)                      |
| 2H12C10-40-23 | 922 (4,102)              | 14.8 (37.5)            | 58,929 [29.5] (262)       | 0.7 (1.7)                      | 2H12C15-40-23 | 3,224 (14,341)           | 5.5 (14.0)             | 58,929 [29.5] (262)       | 0.6 (1.6)                      |
| 2H12C10-50-23 | 872 (3,880)              | 14.8 (37.5)            | 92,076 [46.0] (410)       | 0.4 (1.1)                      | 2H12C15-50-23 | 3,174 (14,119)           | 5.5 (14.0)             | 92,076 [46.0] (410)       | 0.4 (1.0)                      |
| 2H12C10-60-23 | 847 (3,768)              | 14.8 (37.5)            | 132,589 [66.3] (590)      | 0.3 (.8)                       | 2H12C15-60-23 | 3,149 (14,008)           | 5.5 (14.0)             | 132,589 [66.3] (590)      | 0.3 (.7)                       |
| 2H12C10-32-27 | 660 (2,936)              | 19.9 (50.4)            | 28,950 [14.5] (129)       | 1.3 (3.3)                      | 2H12C15-32-27 | 2,373 (10,556)           | 7.4 (18.8)             | 28,950 [14.5] (129)       | 1.2 (3.0)                      |
| 2H12C10-40-27 | 635 (2,825)              | 19.9 (50.4)            | 43,854 [21.9] (195)       | 0.9 (2.2)                      | 2H12C15-40-27 | 2,348 (10,445)           | 7.4 (18.8)             | 43,854 [21.9] (195)       | 0.8 (2.1)                      |
| 2H12C10-50-27 | 585 (2,603)              | 19.9 (50.4)            | 68,522 [34.3] (305)       | 0.6 (1.5)                      | 2H12C15-50-27 | 2,298 (10,223)           | 7.4 (18.8)             | 68,522 [34.3] (305)       | 0.6 (1.4)                      |
| 2H12C10-60-27 | 560 (2,491)              | 19.9 (50.4)            | 98,671 [49.3] (439)       | 0.4 (1.0)                      | 2H12C15-60-27 | 2,273 (10,111)           | 7.4 (18.8)             | 98,671 [49.3] (439)       | 0.4 (1.0)                      |
| 2H12C10-32-31 | 434 (1,929)              | 27.2 (69.2)            | 21,099 [10.5] (94)        | 1.8 (4.5)                      | 2H12C15-32-31 | 1,682 (7,482)            | 10.1 (25.7)            | 21,099 [10.5] (94)        | 1.6 (4.1)                      |
| 2H12C10-40-31 | 409 (1,818)              | 27.2 (69.2)            | 31,961 [16.0] (142)       | 1.2 (3.1)                      | 2H12C15-40-31 | 1,657 (7,371)            | 10.1 (25.7)            | 31,961 [16.0] (142)       | 1.1 (2.9)                      |
| 2H12C10-50-31 | 359 (1,595)              | 27.2 (69.2)            | 49,940 [25.0] (222)       | 0.8 (2.0)                      | 2H12C15-50-31 | 1,607 (7,149)            | 10.1 (25.7)            | 49,940 [25.0] (222)       | 0.8 (1.9)                      |
| 2H12C10-60-31 | 334 (1,484)              | 27.2 (69.2)            | 71,913 [36.0] (320)       | 0.6 (1.4)                      | 2H12C15-60-31 | 1,582 (7,038)            | 10.1 (25.7)            | 71,913 [36.0] (320)       | 0.5 (1.4)                      |
| 2H12C10-32-34 | 285 (1,269)              | 36.0 (91.5)            | 15,960 [8.0] (71)         | 2.4 (6.0)                      | 2H12C15-32-34 | 1,230 (5,470)            | 13.4 (34.0)            | 15,960 [8.0] (71)         | 2.1 (5.4)                      |
| 2H12C10-40-34 | 260 (1,158)              | 36.0 (91.5)            | 24,176 [12.1] (108)       | 1.6 (4.1)                      | 2H12C15-40-34 | 1,205 (5,359)            | 13.4 (34.0)            | 24,176 [12.1] (108)       | 1.5 (3.8)                      |
| 2H12C10-50-34 | 210 (936)                | 36.0 (91.5)            | 37,775 [18.9] (168)       | 1.0 (2.7)                      | 2H12C15-50-34 | 1,155 (5,137)            | 13.4 (34.0)            | 37,775 [18.9] (168)       | 1.0 (2.5)                      |
| 2H12C10-60-34 | 185 (825)                | 36.0 (91.5)            | 54,396 [27.2] (242)       | 0.7 (1.9)                      | 2H12C15-60-34 | 1,130 (5,025)            | 13.4 (34.0)            | 54,396 [27.2] (242)       | 0.7 (1.8)                      |
| 2H12C10-32-36 | 188 (838)                | 45.6 (115.9)           | 12,600 [6.3] (56)         | 3.0 (7.6)                      | 2H12C15-32-36 | 934 (4,155)              | 17.0 (43.1)            | 12,600 [6.3] (56)         | 2.7 (6.8)                      |
| 2H12C10-40-36 | 163 (727)                | 45.6 (115.9)           | 19,086 [9.5] (85)         | 2.0 (5.2)                      | 2H12C15-40-36 | 909 (4,043)              | 17.0 (43.1)            | 19,086 [9.5] (85)         | 1.9 (4.8)                      |
| 2H12C10-50-36 | 113 (505)                | 45.6 (115.9)           | 29,822 [14.9] (133)       | 1.3 (3.4)                      | 2H12C15-50-36 | 859 (3,821)              | 17.0 (43.1)            | 29,822 [14.9] (133)       | 1.3 (3.2)                      |
| 2H12C10-60-36 | 88 (393)                 | 45.6 (115.9)           | 42,944 [21.5] (191)       | 0.9 (2.4)                      | 2H12C15-60-36 | 834 (3,710)              | 17.0 (43.1)            | 42,944 [21.5] (191)       | 0.9 (2.3)                      |
|               |                          |                        |                           |                                |               |                          |                        |                           |                                |
| 2H12C20-32-23 | 5,350 (23,796)           | 2.9 (7.5)              | 38,902 [19.5] (173)       | 1.0 (2.5)                      | 2H12C25-32-23 | 7,853 (34,931)           | 1.8 (4.7)              | 38,902 [19.5] (173)       | 0.7 (1.7)                      |
| 2H12C20-40-23 | 5,325 (23,685)           | 2.9 (7.5)              | 58,929 [29.5] (262)       | 0.7 (1.7)                      | 2H12C25-40-23 | 7,828 (34,820)           | 1.8 (4.7)              | 58,929 [29.5] (262)       | 0.5 (1.3)                      |
| 2H12C20-50-23 | 5,275 (23,462)           | 2.9 (7.5)              | 92,076 [46.0] (410)       | 0.4 (1.1)                      | 2H12C25-50-23 | 7,778 (34,598)           | 1.8 (4.7)              | 92,076 [46.0] (410)       | 0.4 (.9)                       |
| 2H12C20-60-23 | 5,250 (23,351)           | 2.9 (7.5)              | 132,589 [66.3] (590)      | 0.3 (.8)                       | 2H12C25-60-23 | 7,753 (34,487)           | 1.8 (4.7)              | 132,589 [66.3] (590)      | 0.3 (.7)                       |
| 2H12C20-32-27 | 3,936 (17,510)           | 4.0 (10.1)             | 28,950 [14.5] (129)       | 1.3 (3.3)                      | 2H12C25-32-27 | 5,799 (25,796)           | 2.5 (6.3)              | 28,950 [14.5] (129)       | 0.9 (2.3)                      |
| 2H12C20-40-27 | 3,911 (17,398)           | 4.0 (10.1)             | 43,854 [21.9] (195)       | 0.9 (2.2)                      | 2H12C25-40-27 | 5,774 (25,685)           | 2.5 (6.3)              | 43,854 [21.9] (195)       | 0.7 (1.7)                      |
| 2H12C20-50-27 | 3,861 (17,176)           | 4.0 (10.1)             | 68,522 [34.3] (305)       | 0.6 (1.5)                      | 2H12C25-50-27 | 5,724 (25,463)           | 2.5 (6.3)              | 68,522 [34.3] (305)       | 0.5 (1.2)                      |
| 2H12C20-60-27 | 3,836 (17,065)           | 4.0 (10.1)             | 98,671 [49.3] (439)       | 0.4 (1.0)                      | 2H12C25-60-27 | 5,699 (25,351)           | 2.5 (6.3)              | 98,671 [49.3] (439)       | 0.4 (.9)                       |
| 2H12C20-32-31 | 2,821 (12,550)           | 5.4 (13.8)             | 21,099 [10.5] (94)        | 1.4 (3.6)                      | 2H12C25-32-31 | 4,179 (18,590)           | 3.4 (8.7)              | 21,099 [10.5] (94)        | 1.2 (3.1)                      |
| 2H12C20-40-31 | 2,796 (12,439)           | 5.4 (13.8)             | 31,961 [16.0] (142)       | 1.0 (2.6)                      | 2H12C25-40-31 | 4,154 (18,478)           | 3.4 (8.7)              | 31,961 [16.0] (142)       | 0.9 (2.4)                      |
| 2H12C20-50-31 | 2,746 (12,216)           | 5.4 (13.8)             | 49,940 [25.0] (222)       | 0.7 (1.8)                      | 2H12C25-50-31 | 4,104 (18,256)           | 3.4 (8.7)              | 49,940 [25.0] (222)       | 0.7 (1.7)                      |
| 2H12C20-60-31 | 2,721 (12,105)           | 5.4 (13.8)             | 71,913 [36.0] (320)       | 0.5 (1.3)                      | 2H12C25-60-31 | 4,079 (18,145)           | 3.4 (8.7)              | 71,913 [36.0] (320)       | 0.5 (1.2)                      |
| 2H12C20-32-34 | 2,091 (9,303)            | 7.2 (18.3)             | 15,960 [8.0] (71)         | 1.9 (4.8)                      | 2H12C25-32-34 | 3,118 (13,872)           | 4.5 (11.5)             | 15,960 [8.0] (71)         | 1.6 (4.1)                      |
| 2H12C20-40-34 | 2,066 (9,192)            | 7.2 (18.3)             | 24,176 [12.1] (108)       | 1.4 (3.5)                      | 2H12C25-40-34 | 3,093 (13,761)           | 4.5 (11.5)             | 24,176 [12.1] (108)       | 1.2 (3.1)                      |
| 2H12C20-50-34 | 2,016 (8,970)            | 7.2 (18.3)             | 37,775 [18.9] (168)       | 0.9 (2.4)                      | 2H12C25-50-34 | 3,043 (13,538)           | 4.5 (11.5)             | 37,775 [18.9] (168)       | 0.9 (2.2)                      |
| 2H12C20-60-34 | 1,991 (8,859)            | 7.2 (18.3)             | 54,396 [27.2] (242)       | 0.7 (1.7)                      | 2H12C25-60-34 | 3,018 (13,427)           | 4.5 (11.5)             | 54,396 [27.2] (242)       | 0.6 (1.6)                      |
| 2H12C20-32-36 | 1,614 (7,181)            | 9.1 (23.1)             | 12,600 [6.3] (56)         | 2.4 (6.0)                      | 2H12C25-32-36 | 2,425 (10,787)           | 5.7 (14.5)             | 12,600 [6.3] (56)         | 2.1 (5.2)                      |
| 2H12C20-40-36 | 1,589 (7,070)            | 9.1 (23.1)             | 19,086 [9.5] (85)         | 1.7 (4.4)                      | 2H12C25-40-36 | 2,400 (10,676)           | 5.7 (14.5)             | 19,086 [9.5] (85)         | 1.6 (3.9)                      |
| 2H12C20-50-36 | 1,539 (6,847)            | 9.1 (23.1)             | 29,822 [14.9] (133)       | 1.2 (3.0)                      | 2H12C25-50-36 | 2,350 (10,454)           | 5.7 (14.5)             | 29,822 [14.9] (133)       | 1.1 (2.8)                      |
| 2H12C20-60-36 | 1,514 (6,736)            | 9.1 (23.1)             | 42,944 [21.5] (191)       | 0.9 (2.2)                      | 2H12C25-60-36 | 2,325 (10,343)           | 5.7 (14.5)             | 42,944 [21.5] (191)       | 0.8 (2.1)                      |

**H-Series - HSHF -- Double HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 2H13C10-32-23 | 1,233 (5,483)            | 14.8 (37.5)            | 48,798 [24.4] (217)       | 1.0 (2.5)                      | 2H13C15-32-23 | 4,120 (18,327)           | 5.5 (14.0)             | 48,798 [24.4] (217)       | 0.9 (2.2)                      |
| 2H13C10-40-23 | 1,208 (5,372)            | 14.8 (37.5)            | 73,919 [37.0] (329)       | 0.7 (1.7)                      | 2H13C15-40-23 | 4,095 (18,216)           | 5.5 (14.0)             | 73,919 [37.0] (329)       | 0.6 (1.6)                      |
| 2H13C10-50-23 | 1,158 (5,149)            | 14.8 (37.5)            | 115,499 [57.7] (514)      | 0.4 (1.1)                      | 2H13C15-50-23 | 4,045 (17,994)           | 5.5 (14.0)             | 115,499 [57.7] (514)      | 0.4 (1.0)                      |
| 2H13C10-60-23 | 1,133 (5,038)            | 14.8 (37.5)            | 166,318 [83.2] (740)      | 0.3 (.8)                       | 2H13C15-60-23 | 4,020 (17,882)           | 5.5 (14.0)             | 166,318 [83.2] (740)      | 0.3 (.7)                       |
| 2H13C10-32-27 | 873 (3,881)              | 19.9 (50.4)            | 36,315 [18.2] (162)       | 1.3 (3.3)                      | 2H13C15-32-27 | 3,021 (13,440)           | 7.4 (18.8)             | 36,315 [18.2] (162)       | 1.2 (3.0)                      |
| 2H13C10-40-27 | 848 (3,770)              | 19.9 (50.4)            | 55,010 [27.5] (245)       | 0.9 (2.2)                      | 2H13C15-40-27 | 2,996 (13,328)           | 7.4 (18.8)             | 55,010 [27.5] (245)       | 0.8 (2.1)                      |
| 2H13C10-50-27 | 798 (3,548)              | 19.9 (50.4)            | 85,953 [43.0] (382)       | 0.6 (1.5)                      | 2H13C15-50-27 | 2,946 (13,106)           | 7.4 (18.8)             | 85,953 [43.0] (382)       | 0.6 (1.4)                      |
| 2H13C10-60-27 | 773 (3,436)              | 19.9 (50.4)            | 123,772 [61.9] (551)      | 0.4 (1.0)                      | 2H13C15-60-27 | 2,921 (12,995)           | 7.4 (18.8)             | 123,772 [61.9] (551)      | 0.4 (1.0)                      |
| 2H13C10-32-31 | 588 (2,618)              | 27.2 (69.2)            | 26,467 [13.2] (118)       | 1.8 (4.5)                      | 2H13C15-32-31 | 2,155 (9,584)            | 10.1 (25.7)            | 26,467 [13.2] (118)       | 1.6 (4.1)                      |
| 2H13C10-40-31 | 563 (2,506)              | 27.2 (69.2)            | 40,092 [20.0] (178)       | 1.2 (3.1)                      | 2H13C15-40-31 | 2,130 (9,473)            | 10.1 (25.7)            | 40,092 [20.0] (178)       | 1.1 (2.9)                      |
| 2H13C10-50-31 | 513 (2,284)              | 27.2 (69.2)            | 62,643 [31.3] (279)       | 0.8 (2.0)                      | 2H13C15-50-31 | 2,080 (9,250)            | 10.1 (25.7)            | 62,643 [31.3] (279)       | 0.8 (1.9)                      |
| 2H13C10-60-31 | 488 (2,173)              | 27.2 (69.2)            | 90,207 [45.1] (401)       | 0.6 (1.4)                      | 2H13C15-60-31 | 2,055 (9,139)            | 10.1 (25.7)            | 90,207 [45.1] (401)       | 0.5 (1.4)                      |
| 2H13C10-32-34 | 402 (1,790)              | 36.0 (91.5)            | 20,020 [10.0] (89)        | 2.4 (6.0)                      | 2H13C15-32-34 | 1,587 (7,060)            | 13.4 (34.0)            | 20,020 [10.0] (89)        | 2.1 (5.4)                      |
| 2H13C10-40-34 | 377 (1,679)              | 36.0 (91.5)            | 30,326 [15.2] (135)       | 1.6 (4.1)                      | 2H13C15-40-34 | 1,562 (6,949)            | 13.4 (34.0)            | 30,326 [15.2] (135)       | 1.5 (3.8)                      |
| 2H13C10-50-34 | 327 (1,457)              | 36.0 (91.5)            | 47,384 [23.7] (211)       | 1.0 (2.7)                      | 2H13C15-50-34 | 1,512 (6,726)            | 13.4 (34.0)            | 47,384 [23.7] (211)       | 1.0 (2.5)                      |
| 2H13C10-60-34 | 302 (1,346)              | 36.0 (91.5)            | 68,233 [34.1] (304)       | 0.7 (1.9)                      | 2H13C15-60-34 | 1,487 (6,615)            | 13.4 (34.0)            | 68,233 [34.1] (304)       | 0.7 (1.8)                      |
| 2H13C10-32-36 | 281 (1,250)              | 45.6 (115.9)           | 15,805 [7.9] (70)         | 3.0 (7.6)                      | 2H13C15-32-36 | 1,216 (5,410)            | 17.0 (43.1)            | 15,805 [7.9] (70)         | 2.7 (6.8)                      |
| 2H13C10-40-36 | 256 (1,138)              | 45.6 (115.9)           | 23,941 [12.0] (106)       | 2.0 (5.2)                      | 2H13C15-40-36 | 1,191 (5,298)            | 17.0 (43.1)            | 23,941 [12.0] (106)       | 1.9 (4.8)                      |
| 2H13C10-50-36 | 206 (916)                | 45.6 (115.9)           | 37,409 [18.7] (166)       | 1.3 (3.4)                      | 2H13C15-50-36 | 1,141 (5,076)            | 17.0 (43.1)            | 37,409 [18.7] (166)       | 1.3 (3.2)                      |
| 2H13C10-60-36 | 181 (805)                | 45.6 (115.9)           | 53,868 [26.9] (240)       | 0.9 (2.4)                      | 2H13C15-60-36 | 1,116 (4,965)            | 17.0 (43.1)            | 53,868 [26.9] (240)       | 0.9 (2.3)                      |
| 2H13C20-32-23 | 6,755 (30,047)           | 2.9 (7.5)              | 48,798 [24.4] (217)       | 1.0 (2.5)                      | 2H13C25-32-23 | 9,895 (44,015)           | 1.8 (4.7)              | 48,798 [24.4] (217)       | 0.7 (1.7)                      |
| 2H13C20-40-23 | 6,730 (29,936)           | 2.9 (7.5)              | 73,919 [37.0] (329)       | 0.7 (1.7)                      | 2H13C25-40-23 | 9,870 (43,904)           | 1.8 (4.7)              | 73,919 [37.0] (329)       | 0.5 (1.3)                      |
| 2H13C20-50-23 | 6,680 (29,714)           | 2.9 (7.5)              | 115,499 [57.7] (514)      | 0.4 (1.1)                      | 2H13C25-50-23 | 9,820 (43,682)           | 1.8 (4.7)              | 115,499 [57.7] (514)      | 0.4 (.9)                       |
| 2H13C20-60-23 | 6,655 (29,603)           | 2.9 (7.5)              | 166,318 [83.2] (740)      | 0.3 (.8)                       | 2H13C25-60-23 | 9,795 (43,571)           | 1.8 (4.7)              | 166,318 [83.2] (740)      | 0.3 (.7)                       |
| 2H13C20-32-27 | 4,982 (22,162)           | 4.0 (10.1)             | 36,315 [18.2] (162)       | 1.3 (3.3)                      | 2H13C25-32-27 | 7,319 (32,557)           | 2.5 (6.3)              | 36,315 [18.2] (162)       | 0.9 (2.3)                      |
| 2H13C20-40-27 | 4,957 (22,051)           | 4.0 (10.1)             | 55,010 [27.5] (245)       | 0.9 (2.2)                      | 2H13C25-40-27 | 7,294 (32,445)           | 2.5 (6.3)              | 55,010 [27.5] (245)       | 0.7 (1.7)                      |
| 2H13C20-50-27 | 4,907 (21,828)           | 4.0 (10.1)             | 85,953 [43.0] (382)       | 0.6 (1.5)                      | 2H13C25-50-27 | 7,244 (32,223)           | 2.5 (6.3)              | 85,953 [43.0] (382)       | 0.5 (1.2)                      |
| 2H13C20-60-27 | 4,882 (21,717)           | 4.0 (10.1)             | 123,772 [61.9] (551)      | 0.4 (1.0)                      | 2H13C25-60-27 | 7,219 (32,112)           | 2.5 (6.3)              | 123,772 [61.9] (551)      | 0.4 (.9)                       |
| 2H13C20-32-31 | 3,584 (15,941)           | 5.4 (13.8)             | 26,467 [13.2] (118)       | 1.4 (3.6)                      | 2H13C25-32-31 | 5,287 (23,517)           | 3.4 (8.7)              | 26,467 [13.2] (118)       | 1.2 (3.1)                      |
| 2H13C20-40-31 | 3,559 (15,829)           | 5.4 (13.8)             | 40,092 [20.0] (178)       | 1.0 (2.6)                      | 2H13C25-40-31 | 5,262 (23,405)           | 3.4 (8.7)              | 40,092 [20.0] (178)       | 0.9 (2.4)                      |
| 2H13C20-50-31 | 3,509 (15,607)           | 5.4 (13.8)             | 62,643 [31.3] (279)       | 0.7 (1.8)                      | 2H13C25-50-31 | 5,212 (23,183)           | 3.4 (8.7)              | 62,643 [31.3] (279)       | 0.7 (1.7)                      |
| 2H13C20-60-31 | 3,484 (15,496)           | 5.4 (13.8)             | 90,207 [45.1] (401)       | 0.5 (1.3)                      | 2H13C25-60-31 | 5,187 (23,072)           | 3.4 (8.7)              | 90,207 [45.1] (401)       | 0.5 (1.2)                      |
| 2H13C20-32-34 | 2,668 (11,868)           | 7.2 (18.3)             | 20,020 [10.0] (89)        | 1.9 (4.8)                      | 2H13C25-32-34 | 3,956 (17,599)           | 4.5 (11.5)             | 20,020 [10.0] (89)        | 1.6 (4.1)                      |
| 2H13C20-40-34 | 2,643 (11,757)           | 7.2 (18.3)             | 30,326 [15.2] (135)       | 1.4 (3.5)                      | 2H13C25-40-34 | 3,931 (17,487)           | 4.5 (11.5)             | 30,326 [15.2] (135)       | 1.2 (3.1)                      |
| 2H13C20-50-34 | 2,593 (11,534)           | 7.2 (18.3)             | 47,384 [23.7] (211)       | 0.9 (2.4)                      | 2H13C25-50-34 | 3,881 (17,265)           | 4.5 (11.5)             | 47,384 [23.7] (211)       | 0.9 (2.2)                      |
| 2H13C20-60-34 | 2,568 (11,423)           | 7.2 (18.3)             | 68,233 [34.1] (304)       | 0.7 (1.7)                      | 2H13C25-60-34 | 3,856 (17,154)           | 4.5 (11.5)             | 68,233 [34.1] (304)       | 0.6 (1.6)                      |
| 2H13C20-32-36 | 2,070 (9,206)            | 9.1 (23.1)             | 15,805 [7.9] (70)         | 2.4 (6.0)                      | 2H13C25-32-36 | 3,087 (13,730)           | 5.7 (14.5)             | 15,805 [7.9] (70)         | 2.1 (5.2)                      |
| 2H13C20-40-36 | 2,045 (9,094)            | 9.1 (23.1)             | 23,941 [12.0] (106)       | 1.7 (4.4)                      | 2H13C25-40-36 | 3,062 (13,618)           | 5.7 (14.5)             | 23,941 [12.0] (106)       | 1.6 (3.9)                      |
| 2H13C20-50-36 | 1,995 (8,872)            | 9.1 (23.1)             | 37,409 [18.7] (166)       | 1.2 (3.0)                      | 2H13C25-50-36 | 3,012 (13,396)           | 5.7 (14.5)             | 37,409 [18.7] (166)       | 1.1 (2.8)                      |
| 2H13C20-60-36 | 1,970 (8,761)            | 9.1 (23.1)             | 53,868 [26.9] (240)       | 0.9 (2.2)                      | 2H13C25-60-36 | 2,987 (13,285)           | 5.7 (14.5)             | 53,868 [26.9] (240)       | 0.8 (2.1)                      |

**H-Series - HSHF -- Double HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 2H14C10-32-23 | 1,261 (5,608)            | 14.8 (37.5)            | 49,775 [24.9] (221)       | 1.0 (2.5)                      | 2H14C15-32-23 | 4,206 (18,709)           | 5.5 (14.0)             | 49,775 [24.9] (221)       | 0.9 (2.2)                      |
| 2H14C10-40-23 | 1,236 (5,497)            | 14.8 (37.5)            | 75,398 [37.7] (335)       | 0.7 (1.7)                      | 2H14C15-40-23 | 4,181 (18,598)           | 5.5 (14.0)             | 75,398 [37.7] (335)       | 0.6 (1.6)                      |
| 2H14C10-50-23 | 1,186 (5,275)            | 14.8 (37.5)            | 117,810 [58.9] (524)      | 0.4 (1.1)                      | 2H14C15-50-23 | 4,131 (18,376)           | 5.5 (14.0)             | 117,810 [58.9] (524)      | 0.4 (1.0)                      |
| 2H14C10-60-23 | 1,161 (5,164)            | 14.8 (37.5)            | 169,646 [84.8] (755)      | 0.3 (.8)                       | 2H14C15-60-23 | 4,106 (18,265)           | 5.5 (14.0)             | 169,646 [84.8] (755)      | 0.3 (.7)                       |
| 2H14C10-32-27 | 1,158 (5,152)            | 19.9 (50.4)            | 46,219 [23.1] (206)       | 1.3 (3.3)                      | 2H14C15-32-27 | 3,893 (17,317)           | 7.4 (18.8)             | 46,219 [23.1] (206)       | 1.2 (3.0)                      |
| 2H14C10-40-27 | 1,133 (5,041)            | 19.9 (50.4)            | 70,012 [35.0] (311)       | 0.9 (2.2)                      | 2H14C15-40-27 | 3,868 (17,206)           | 7.4 (18.8)             | 70,012 [35.0] (311)       | 0.8 (2.1)                      |
| 2H14C10-50-27 | 1,083 (4,819)            | 19.9 (50.4)            | 109,394 [54.7] (487)      | 0.6 (1.5)                      | 2H14C15-50-27 | 3,818 (16,984)           | 7.4 (18.8)             | 109,394 [54.7] (487)      | 0.6 (1.4)                      |
| 2H14C10-60-27 | 1,058 (4,707)            | 19.9 (50.4)            | 157,528 [78.8] (701)      | 0.4 (1.0)                      | 2H14C15-60-27 | 3,793 (16,873)           | 7.4 (18.8)             | 157,528 [78.8] (701)      | 0.4 (1.0)                      |
| 2H14C10-32-31 | 797 (3,544)              | 27.2 (69.2)            | 33,685 [16.8] (150)       | 1.8 (4.5)                      | 2H14C15-32-31 | 2,790 (12,410)           | 10.1 (25.7)            | 33,685 [16.8] (150)       | 1.6 (4.1)                      |
| 2H14C10-40-31 | 772 (3,433)              | 27.2 (69.2)            | 51,026 [25.5] (227)       | 1.2 (3.1)                      | 2H14C15-40-31 | 2,765 (12,299)           | 10.1 (25.7)            | 51,026 [25.5] (227)       | 1.1 (2.9)                      |
| 2H14C10-50-31 | 722 (3,210)              | 27.2 (69.2)            | 79,728 [39.9] (355)       | 0.8 (2.0)                      | 2H14C15-50-31 | 2,715 (12,076)           | 10.1 (25.7)            | 79,728 [39.9] (355)       | 0.8 (1.9)                      |
| 2H14C10-60-31 | 697 (3,099)              | 27.2 (69.2)            | 114,808 [57.4] (511)      | 0.6 (1.4)                      | 2H14C15-60-31 | 2,690 (11,965)           | 10.1 (25.7)            | 114,808 [57.4] (511)      | 0.5 (1.4)                      |
| 2H14C10-32-34 | 560 (2,491)              | 36.0 (91.5)            | 25,480 [12.7] (113)       | 2.4 (6.0)                      | 2H14C15-32-34 | 2,068 (9,197)            | 13.4 (34.0)            | 25,480 [12.7] (113)       | 2.1 (5.4)                      |
| 2H14C10-40-34 | 535 (2,380)              | 36.0 (91.5)            | 38,597 [19.3] (172)       | 1.6 (4.1)                      | 2H14C15-40-34 | 2,043 (9,086)            | 13.4 (34.0)            | 38,597 [19.3] (172)       | 1.5 (3.8)                      |
| 2H14C10-50-34 | 485 (2,157)              | 36.0 (91.5)            | 60,307 [30.2] (268)       | 1.0 (2.7)                      | 2H14C15-50-34 | 1,993 (8,864)            | 13.4 (34.0)            | 60,307 [30.2] (268)       | 1.0 (2.5)                      |
| 2H14C10-60-34 | 460 (2,046)              | 36.0 (91.5)            | 86,842 [43.4] (386)       | 0.7 (1.9)                      | 2H14C15-60-34 | 1,968 (8,753)            | 13.4 (34.0)            | 86,842 [43.4] (386)       | 0.7 (1.8)                      |
| 2H14C10-32-36 | 405 (1,803)              | 45.6 (115.9)           | 20,116 [10.1] (89)        | 3.0 (7.6)                      | 2H14C15-32-36 | 1,596 (7,097)            | 17.0 (43.1)            | 20,116 [10.1] (89)        | 2.7 (6.8)                      |
| 2H14C10-40-36 | 380 (1,691)              | 45.6 (115.9)           | 30,471 [15.2] (136)       | 2.0 (5.2)                      | 2H14C15-40-36 | 1,571 (6,986)            | 17.0 (43.1)            | 30,471 [15.2] (136)       | 1.9 (4.8)                      |
| 2H14C10-50-36 | 330 (1,469)              | 45.6 (115.9)           | 47,611 [23.8] (212)       | 1.3 (3.4)                      | 2H14C15-50-36 | 1,521 (6,764)            | 17.0 (43.1)            | 47,611 [23.8] (212)       | 1.3 (3.2)                      |
| 2H14C10-60-36 | 305 (1,358)              | 45.6 (115.9)           | 68,560 [34.3] (305)       | 0.9 (2.4)                      | 2H14C15-60-36 | 1,496 (6,652)            | 17.0 (43.1)            | 68,560 [34.3] (305)       | 0.9 (2.3)                      |
| 2H14C20-32-23 | 6,894 (30,664)           | 2.9 (7.5)              | 49,775 [24.9] (221)       | 1.0 (2.5)                      | 2H14C25-32-23 | 10,097 (44,912)          | 1.8 (4.7)              | 49,775 [24.9] (221)       | 0.7 (1.7)                      |
| 2H14C20-40-23 | 6,869 (30,553)           | 2.9 (7.5)              | 75,398 [37.7] (335)       | 0.7 (1.7)                      | 2H14C25-40-23 | 10,072 (44,800)          | 1.8 (4.7)              | 75,398 [37.7] (335)       | 0.5 (1.3)                      |
| 2H14C20-50-23 | 6,819 (30,331)           | 2.9 (7.5)              | 117,810 [58.9] (524)      | 0.4 (1.1)                      | 2H14C25-50-23 | 10,022 (44,578)          | 1.8 (4.7)              | 117,810 [58.9] (524)      | 0.4 (.9)                       |
| 2H14C20-60-23 | 6,794 (30,219)           | 2.9 (7.5)              | 169,646 [84.8] (755)      | 0.3 (.8)                       | 2H14C25-60-23 | 9,997 (44,467)           | 1.8 (4.7)              | 169,646 [84.8] (755)      | 0.3 (.7)                       |
| 2H14C20-32-27 | 6,389 (28,418)           | 4.0 (10.1)             | 46,219 [23.1] (206)       | 1.3 (3.3)                      | 2H14C25-32-27 | 9,363 (41,648)           | 2.5 (6.3)              | 46,219 [23.1] (206)       | 0.9 (2.3)                      |
| 2H14C20-40-27 | 6,364 (28,307)           | 4.0 (10.1)             | 70,012 [35.0] (311)       | 0.9 (2.2)                      | 2H14C25-40-27 | 9,338 (41,537)           | 2.5 (6.3)              | 70,012 [35.0] (311)       | 0.7 (1.7)                      |
| 2H14C20-50-27 | 6,314 (28,085)           | 4.0 (10.1)             | 109,394 [54.7] (487)      | 0.6 (1.5)                      | 2H14C25-50-27 | 9,288 (41,314)           | 2.5 (6.3)              | 109,394 [54.7] (487)      | 0.5 (1.2)                      |
| 2H14C20-60-27 | 6,289 (27,973)           | 4.0 (10.1)             | 157,528 [78.8] (701)      | 0.4 (1.0)                      | 2H14C25-60-27 | 9,263 (41,203)           | 2.5 (6.3)              | 157,528 [78.8] (701)      | 0.4 (.9)                       |
| 2H14C20-32-31 | 4,609 (20,500)           | 5.4 (13.8)             | 33,685 [16.8] (150)       | 1.4 (3.6)                      | 2H14C25-32-31 | 6,776 (30,142)           | 3.4 (8.7)              | 33,685 [16.8] (150)       | 1.2 (3.1)                      |
| 2H14C20-40-31 | 4,584 (20,389)           | 5.4 (13.8)             | 51,026 [25.5] (227)       | 1.0 (2.6)                      | 2H14C25-40-31 | 6,751 (30,031)           | 3.4 (8.7)              | 51,026 [25.5] (227)       | 0.9 (2.4)                      |
| 2H14C20-50-31 | 4,534 (20,167)           | 5.4 (13.8)             | 79,728 [39.9] (355)       | 0.7 (1.8)                      | 2H14C25-50-31 | 6,701 (29,809)           | 3.4 (8.7)              | 79,728 [39.9] (355)       | 0.7 (1.7)                      |
| 2H14C20-60-31 | 4,509 (20,056)           | 5.4 (13.8)             | 114,808 [57.4] (511)      | 0.5 (1.3)                      | 2H14C25-60-31 | 6,676 (29,698)           | 3.4 (8.7)              | 114,808 [57.4] (511)      | 0.5 (1.2)                      |
| 2H14C20-32-34 | 3,443 (15,317)           | 7.2 (18.3)             | 25,480 [12.7] (113)       | 1.9 (4.8)                      | 2H14C25-32-34 | 5,083 (22,610)           | 4.5 (11.5)             | 25,480 [12.7] (113)       | 1.6 (4.1)                      |
| 2H14C20-40-34 | 3,418 (15,206)           | 7.2 (18.3)             | 38,597 [19.3] (172)       | 1.4 (3.5)                      | 2H14C25-40-34 | 5,058 (22,499)           | 4.5 (11.5)             | 38,597 [19.3] (172)       | 1.2 (3.1)                      |
| 2H14C20-50-34 | 3,368 (14,983)           | 7.2 (18.3)             | 60,307 [30.2] (268)       | 0.9 (2.4)                      | 2H14C25-50-34 | 5,008 (22,277)           | 4.5 (11.5)             | 60,307 [30.2] (268)       | 0.9 (2.2)                      |
| 2H14C20-60-34 | 3,343 (14,872)           | 7.2 (18.3)             | 86,842 [43.4] (386)       | 0.7 (1.7)                      | 2H14C25-60-34 | 4,983 (22,166)           | 4.5 (11.5)             | 86,842 [43.4] (386)       | 0.6 (1.6)                      |
| 2H14C20-32-36 | 2,682 (11,929)           | 9.1 (23.1)             | 20,116 [10.1] (89)        | 2.4 (6.0)                      | 2H14C25-32-36 | 3,976 (17,686)           | 5.7 (14.5)             | 20,116 [10.1] (89)        | 2.1 (5.2)                      |
| 2H14C20-40-36 | 2,657 (11,817)           | 9.1 (23.1)             | 30,471 [15.2] (136)       | 1.7 (4.4)                      | 2H14C25-40-36 | 3,951 (17,575)           | 5.7 (14.5)             | 30,471 [15.2] (136)       | 1.6 (3.9)                      |
| 2H14C20-50-36 | 2,607 (11,595)           | 9.1 (23.1)             | 47,611 [23.8] (212)       | 1.2 (3.0)                      | 2H14C25-50-36 | 3,901 (17,353)           | 5.7 (14.5)             | 47,611 [23.8] (212)       | 1.1 (2.8)                      |
| 2H14C20-60-36 | 2,582 (11,484)           | 9.1 (23.1)             | 68,560 [34.3] (305)       | 0.9 (2.2)                      | 2H14C25-60-36 | 3,876 (17,242)           | 5.7 (14.5)             | 68,560 [34.3] (305)       | 0.8 (2.1)                      |

**H-Series - HSHF -- Double HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 2H17C10-32-23 | 1,261 (5,608)            | 9.8 (25.0)             | 49,775 [24.9] (221)       | 1.0 (2.5)                      | 2H17C15-32-23 | 4,206 (18,709)           | 3.7 (9.3)              | 49,775 [24.9] (221)       | 0.6 (1.5)                      |
| 2H17C10-40-23 | 1,236 (5,497)            | 9.8 (25.0)             | 75,398 [37.7] (335)       | 0.7 (1.7)                      | 2H17C15-40-23 | 4,181 (18,598)           | 3.7 (9.3)              | 75,398 [37.7] (335)       | 0.4 (1.0)                      |
| 2H17C10-50-23 | 1,186 (5,275)            | 9.8 (25.0)             | 117,810 [58.9] (524)      | 0.4 (1.1)                      | 2H17C15-50-23 | 4,131 (18,376)           | 3.7 (9.3)              | 117,810 [58.9] (524)      | 0.3 (.7)                       |
| 2H17C10-60-23 | 1,161 (5,164)            | 9.8 (25.0)             | 169,646 [84.8] (755)      | 0.3 (.8)                       | 2H17C15-60-23 | 4,106 (18,265)           | 3.7 (9.3)              | 169,646 [84.8] (755)      | 0.2 (.5)                       |
| 2H17C10-32-27 | 1,261 (5,608)            | 13.2 (33.6)            | 49,775 [24.9] (221)       | 1.3 (3.3)                      | 2H17C15-32-27 | 4,206 (18,709)           | 4.9 (12.5)             | 49,775 [24.9] (221)       | 0.8 (2.0)                      |
| 2H17C10-40-27 | 1,236 (5,497)            | 13.2 (33.6)            | 75,398 [37.7] (335)       | 0.9 (2.2)                      | 2H17C15-40-27 | 4,181 (18,598)           | 4.9 (12.5)             | 75,398 [37.7] (335)       | 0.5 (1.4)                      |
| 2H17C10-50-27 | 1,186 (5,275)            | 13.2 (33.6)            | 117,810 [58.9] (524)      | 0.6 (1.5)                      | 2H17C15-50-27 | 4,131 (18,376)           | 4.9 (12.5)             | 117,810 [58.9] (524)      | 0.4 (.9)                       |
| 2H17C10-60-27 | 1,161 (5,164)            | 13.2 (33.6)            | 169,646 [84.8] (755)      | 0.4 (1.0)                      | 2H17C15-60-27 | 4,106 (18,265)           | 4.9 (12.5)             | 169,646 [84.8] (755)      | 0.3 (.7)                       |
| 2H17C10-32-31 | 1,261 (5,608)            | 18.2 (46.1)            | 49,775 [24.9] (221)       | 1.2 (3.0)                      | 2H17C15-32-31 | 4,206 (18,709)           | 6.8 (17.2)             | 49,775 [24.9] (221)       | 1.1 (2.7)                      |
| 2H17C10-40-31 | 1,236 (5,497)            | 18.2 (46.1)            | 75,398 [37.7] (335)       | .8 (2.1)                       | 2H17C15-40-31 | 4,181 (18,598)           | 6.8 (17.2)             | 75,398 [37.7] (335)       | .8 (1.9)                       |
| 2H17C10-50-31 | 1,186 (5,275)            | 18.2 (46.1)            | 117,810 [58.9] (524)      | 0.5 (1.3)                      | 2H17C15-50-31 | 4,131 (18,376)           | 6.8 (17.2)             | 117,810 [58.9] (524)      | 0.5 (1.3)                      |
| 2H17C10-60-31 | 1,161 (5,164)            | 18.2 (46.1)            | 169,646 [84.8] (755)      | 0.4 (.9)                       | 2H17C15-60-31 | 4,106 (18,265)           | 6.8 (17.2)             | 169,646 [84.8] (755)      | 0.4 (.9)                       |
| 2H17C10-32-34 | 1,125 (5,006)            | 24.0 (61.0)            | 45,080 [22.5] (201)       | 1.6 (4.0)                      | 2H17C15-32-34 | 3,793 (16,871)           | 8.9 (22.7)             | 45,080 [22.5] (201)       | 1.4 (3.6)                      |
| 2H17C10-40-34 | 1,100 (4,895)            | 24.0 (61.0)            | 68,286 [34.1] (304)       | 1.1 (2.7)                      | 2H17C15-40-34 | 3,768 (16,760)           | 8.9 (22.7)             | 68,286 [34.1] (304)       | 1.0 (2.5)                      |
| 2H17C10-50-34 | 1,050 (4,672)            | 24.0 (61.0)            | 106,697 [53.3] (475)      | 0.7 (1.8)                      | 2H17C15-50-34 | 3,718 (16,538)           | 8.9 (22.7)             | 106,697 [53.3] (475)      | 0.7 (1.7)                      |
| 2H17C10-60-34 | 1,025 (4,561)            | 24.0 (61.0)            | 153,644 [76.8] (683)      | 0.5 (1.2)                      | 2H17C15-60-34 | 3,693 (16,426)           | 8.9 (22.7)             | 153,644 [76.8] (683)      | 0.5 (1.2)                      |
| 2H17C10-32-36 | 852 (3,788)              | 30.4 (77.2)            | 35,589 [17.8] (158)       | 2.0 (5.1)                      | 2H17C15-32-36 | 2,957 (13,155)           | 11.3 (28.7)            | 35,589 [17.8] (158)       | 1.8 (4.6)                      |
| 2H17C10-40-36 | 827 (3,677)              | 45.6 (115.9)           | 53,910 [27.0] (240)       | 2.0 (5.2)                      | 2H17C15-40-36 | 2,932 (13,044)           | 11.3 (28.7)            | 53,910 [27.0] (240)       | 1.3 (3.2)                      |
| 2H17C10-50-36 | 777 (3,455)              | 45.6 (115.9)           | 84,235 [42.1] (375)       | 1.3 (3.4)                      | 2H17C15-50-36 | 2,882 (12,822)           | 11.3 (28.7)            | 84,235 [42.1] (375)       | 0.8 (2.1)                      |
| 2H17C10-60-36 | 752 (3,343)              | 45.6 (115.9)           | 121,298 [60.6] (540)      | 0.9 (2.4)                      | 2H17C15-60-36 | 2,857 (12,711)           | 11.3 (28.7)            | 121,298 [60.6] (540)      | 0.6 (1.5)                      |
| 2H17C20-32-23 | 6,894 (30,664)           | 2.0 (5.0)              | 49,775 [24.9] (221)       | 1.0 (2.5)                      | 2H17C25-32-23 | 10,097 (44,912)          | 1.2 (3.1)              | 49,775 [24.9] (221)       | 0.4 (1.1)                      |
| 2H17C20-40-23 | 6,869 (30,553)           | 2.0 (5.0)              | 75,398 [37.7] (335)       | 0.7 (1.7)                      | 2H17C25-40-23 | 10,072 (44,800)          | 1.2 (3.1)              | 75,398 [37.7] (335)       | 0.3 (.9)                       |
| 2H17C20-50-23 | 6,819 (30,331)           | 2.0 (5.0)              | 117,810 [58.9] (524)      | 0.4 (1.1)                      | 2H17C25-50-23 | 10,022 (44,578)          | 1.2 (3.1)              | 117,810 [58.9] (524)      | 0.2 (.6)                       |
| 2H17C20-60-23 | 6,794 (30,219)           | 2.0 (5.0)              | 169,646 [84.8] (755)      | 0.3 (.8)                       | 2H17C25-60-23 | 9,997 (44,467)           | 1.2 (3.1)              | 169,646 [84.8] (755)      | 0.2 (.4)                       |
| 2H17C20-32-27 | 6,894 (30,664)           | 2.6 (6.7)              | 49,775 [24.9] (221)       | 1.3 (3.3)                      | 2H17C25-32-27 | 10,097 (44,912)          | 1.7 (4.2)              | 49,775 [24.9] (221)       | 0.6 (1.5)                      |
| 2H17C20-40-27 | 6,869 (30,553)           | 2.6 (6.7)              | 75,398 [37.7] (335)       | 0.9 (2.2)                      | 2H17C25-40-27 | 10,072 (44,800)          | 1.7 (4.2)              | 75,398 [37.7] (335)       | 0.5 (1.1)                      |
| 2H17C20-50-27 | 6,819 (30,331)           | 2.6 (6.7)              | 117,810 [58.9] (524)      | 0.6 (1.5)                      | 2H17C25-50-27 | 10,022 (44,578)          | 1.7 (4.2)              | 117,810 [58.9] (524)      | 0.3 (.8)                       |
| 2H17C20-60-27 | 6,794 (30,219)           | 2.6 (6.7)              | 169,646 [84.8] (755)      | 0.4 (1.0)                      | 2H17C25-60-27 | 9,997 (44,467)           | 1.7 (4.2)              | 169,646 [84.8] (755)      | 0.2 (.6)                       |
| 2H17C20-32-31 | 6,894 (30,664)           | 3.6 (9.2)              | 49,775 [24.9] (221)       | .9 (2.4)                       | 2H17C25-32-31 | 10,097 (44,912)          | 2.3 (5.8)              | 49,775 [24.9] (221)       | 0.8 (2.1)                      |
| 2H17C20-40-31 | 6,869 (30,553)           | 3.6 (9.2)              | 75,398 [37.7] (335)       | .7 (1.7)                       | 2H17C25-40-31 | 10,072 (44,800)          | 2.3 (5.8)              | 75,398 [37.7] (335)       | 0.6 (1.6)                      |
| 2H17C20-50-31 | 6,819 (30,331)           | 3.6 (9.2)              | 117,810 [58.9] (524)      | 0.5 (1.2)                      | 2H17C25-50-31 | 10,022 (44,578)          | 2.3 (5.8)              | 117,810 [58.9] (524)      | 0.4 (1.1)                      |
| 2H17C20-60-31 | 6,794 (30,219)           | 3.6 (9.2)              | 169,646 [84.8] (755)      | 0.3 (.9)                       | 2H17C25-60-31 | 9,997 (44,467)           | 2.3 (5.8)              | 169,646 [84.8] (755)      | 0.3 (.8)                       |
| 2H17C20-32-34 | 6,227 (27,698)           | 4.8 (12.2)             | 45,080 [22.5] (201)       | 1.2 (3.2)                      | 2H17C25-32-34 | 9,128 (40,602)           | 3.0 (7.6)              | 45,080 [22.5] (201)       | 1.1 (2.7)                      |
| 2H17C20-40-34 | 6,202 (27,587)           | 4.8 (12.2)             | 68,286 [34.1] (304)       | .9 (2.3)                       | 2H17C25-40-34 | 9,103 (40,491)           | 3.0 (7.6)              | 68,286 [34.1] (304)       | .8 (2.1)                       |
| 2H17C20-50-34 | 6,152 (27,365)           | 4.8 (12.2)             | 106,697 [53.3] (475)      | 0.6 (1.6)                      | 2H17C25-50-34 | 9,053 (40,268)           | 3.0 (7.6)              | 106,697 [53.3] (475)      | 0.6 (1.5)                      |
| 2H17C20-60-34 | 6,127 (27,253)           | 4.8 (12.2)             | 153,644 [76.8] (683)      | 0.5 (1.2)                      | 2H17C25-60-34 | 9,028 (40,157)           | 3.0 (7.6)              | 153,644 [76.8] (683)      | 0.4 (1.1)                      |
| 2H17C20-32-36 | 4,879 (21,703)           | 6.1 (15.4)             | 35,589 [17.8] (158)       | 1.6 (4.0)                      | 2H17C25-32-36 | 7,169 (31,890)           | 3.8 (9.7)              | 35,589 [17.8] (158)       | 1.4 (3.5)                      |
| 2H17C20-40-36 | 4,854 (21,592)           | 9.1 (23.1)             | 53,910 [27.0] (240)       | 1.7 (4.4)                      | 2H17C25-40-36 | 7,144 (31,779)           | 3.8 (9.7)              | 53,910 [27.0] (240)       | 1.0 (2.6)                      |
| 2H17C20-50-36 | 4,804 (21,370)           | 9.1 (23.1)             | 84,235 [42.1] (375)       | 1.2 (3.0)                      | 2H17C25-50-36 | 7,094 (31,557)           | 3.8 (9.7)              | 84,235 [42.1] (375)       | 0.7 (1.9)                      |
| 2H17C20-60-36 | 4,779 (21,258)           | 9.1 (23.1)             | 121,298 [60.6] (540)      | 0.9 (2.2)                      | 2H17C25-60-36 | 7,069 (31,445)           | 3.8 (9.7)              | 121,298 [60.6] (540)      | 0.5 (1.4)                      |

**H-Series - HSHF -- Double HF Cylinder**

| Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                | Series        | Rapid Stroke Phase       |                        | Load Stroke Phase         |                                |
|---------------|--------------------------|------------------------|---------------------------|--------------------------------|---------------|--------------------------|------------------------|---------------------------|--------------------------------|
|               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |               | Maximum HS Force lbf (N) | Avg HS in/sec (cm/sec) | Maximum HF lbf [Ton] (kN) | Avg HF Speed in/sec (cm/sec) * |
| 2H19C10-32-23 | 1,261 (5,608)            | 14.8 (37.5)            | 49,775 [24.9] (221)       | 1.0 (2.5)                      | 2H19C15-32-23 | 4,206 (18,709)           | 5.5 (14.0)             | 49,775 [24.9] (221)       | 0.9 (2.2)                      |
| 2H19C10-40-23 | 1,236 (5,497)            | 14.8 (37.5)            | 75,398 [37.7] (335)       | 0.7 (1.7)                      | 2H19C15-40-23 | 4,181 (18,598)           | 5.5 (14.0)             | 75,398 [37.7] (335)       | 0.6 (1.6)                      |
| 2H19C10-50-23 | 1,186 (5,275)            | 14.8 (37.5)            | 117,810 [58.9] (524)      | 0.4 (1.1)                      | 2H19C15-50-23 | 4,131 (18,376)           | 5.5 (14.0)             | 117,810 [58.9] (524)      | 0.4 (1.0)                      |
| 2H19C10-60-23 | 1,161 (5,164)            | 14.8 (37.5)            | 169,646 [84.8] (755)      | 0.3 (.8)                       | 2H19C15-60-23 | 4,106 (18,265)           | 5.5 (14.0)             | 169,646 [84.8] (755)      | 0.3 (.7)                       |
| 2H19C10-32-27 | 1,261 (5,608)            | 19.9 (50.4)            | 49,775 [24.9] (221)       | 1.3 (3.3)                      | 2H19C15-32-27 | 4,206 (18,709)           | 7.4 (18.8)             | 49,775 [24.9] (221)       | 1.2 (3.0)                      |
| 2H19C10-40-27 | 1,236 (5,497)            | 19.9 (50.4)            | 75,398 [37.7] (335)       | 0.9 (2.2)                      | 2H19C15-40-27 | 4,181 (18,598)           | 7.4 (18.8)             | 75,398 [37.7] (335)       | 0.8 (2.1)                      |
| 2H19C10-50-27 | 1,186 (5,275)            | 19.9 (50.4)            | 117,810 [58.9] (524)      | 0.6 (1.5)                      | 2H19C15-50-27 | 4,131 (18,376)           | 7.4 (18.8)             | 117,810 [58.9] (524)      | 0.6 (1.4)                      |
| 2H19C10-60-27 | 1,161 (5,164)            | 19.9 (50.4)            | 169,646 [84.8] (755)      | 0.4 (1.0)                      | 2H19C15-60-27 | 4,106 (18,265)           | 7.4 (18.8)             | 169,646 [84.8] (755)      | 0.4 (1.0)                      |
| 2H19C10-32-31 | 1,261 (5,608)            | 27.2 (69.2)            | 49,775 [24.9] (221)       | 1.8 (4.5)                      | 2H19C15-32-31 | 4,206 (18,709)           | 10.1 (25.7)            | 49,775 [24.9] (221)       | 1.6 (4.1)                      |
| 2H19C10-40-31 | 1,236 (5,497)            | 27.2 (69.2)            | 75,398 [37.7] (335)       | 1.2 (3.1)                      | 2H19C15-40-31 | 4,181 (18,598)           | 10.1 (25.7)            | 75,398 [37.7] (335)       | 1.1 (2.9)                      |
| 2H19C10-50-31 | 1,186 (5,275)            | 27.2 (69.2)            | 117,810 [58.9] (524)      | 0.8 (2.0)                      | 2H19C15-50-31 | 4,131 (18,376)           | 10.1 (25.7)            | 117,810 [58.9] (524)      | 0.8 (1.9)                      |
| 2H19C10-60-31 | 1,161 (5,164)            | 27.2 (69.2)            | 169,646 [84.8] (755)      | 0.6 (1.4)                      | 2H19C15-60-31 | 4,106 (18,265)           | 10.1 (25.7)            | 169,646 [84.8] (755)      | 0.5 (1.4)                      |
| 2H19C10-32-34 | 1,206 (5,365)            | 36.0 (91.5)            | 47,880 [23.9] (213)       | 2.4 (6.0)                      | 2H19C15-32-34 | 4,039 (17,967)           | 13.4 (34.0)            | 47,880 [23.9] (213)       | 2.1 (5.4)                      |
| 2H19C10-40-34 | 1,181 (5,254)            | 36.0 (91.5)            | 72,528 [36.3] (323)       | 1.6 (4.1)                      | 2H19C15-40-34 | 4,014 (17,856)           | 13.4 (34.0)            | 72,528 [36.3] (323)       | 1.5 (3.8)                      |
| 2H19C10-50-34 | 1,131 (5,032)            | 36.0 (91.5)            | 113,324 [56.7] (504)      | 1.0 (2.7)                      | 2H19C15-50-34 | 3,964 (17,634)           | 13.4 (34.0)            | 113,324 [56.7] (504)      | 1.0 (2.5)                      |
| 2H19C10-60-34 | 1,106 (4,920)            | 36.0 (91.5)            | 163,187 [81.6] (726)      | 0.7 (1.9)                      | 2H19C15-60-34 | 3,939 (17,523)           | 13.4 (34.0)            | 163,187 [81.6] (726)      | 0.7 (1.8)                      |
| 2H19C10-32-36 | 915 (4,072)              | 45.6 (115.9)           | 37,800 [18.9] (168)       | 3.0 (7.6)                      | 2H19C15-32-36 | 3,152 (14,021)           | 17.0 (43.1)            | 37,800 [18.9] (168)       | 2.7 (6.8)                      |
| 2H19C10-40-36 | 890 (3,961)              | 45.6 (115.9)           | 57,259 [28.6] (255)       | 2.0 (5.2)                      | 2H19C15-40-36 | 3,127 (13,910)           | 17.0 (43.1)            | 57,259 [28.6] (255)       | 1.9 (4.8)                      |
| 2H19C10-50-36 | 840 (3,738)              | 45.6 (115.9)           | 89,467 [44.7] (398)       | 1.3 (3.4)                      | 2H19C15-50-36 | 3,077 (13,687)           | 17.0 (43.1)            | 89,467 [44.7] (398)       | 1.3 (3.2)                      |
| 2H19C10-60-36 | 815 (3,627)              | 45.6 (115.9)           | 128,832 [64.4] (573)      | 0.9 (2.4)                      | 2H19C15-60-36 | 3,052 (13,576)           | 17.0 (43.1)            | 128,832 [64.4] (573)      | 0.9 (2.3)                      |
| 2H19C20-32-23 | 6,894 (30,664)           | 2.9 (7.5)              | 49,775 [24.9] (221)       | 1.0 (2.5)                      | 2H19C25-32-23 | 10,097 (44,912)          | 1.8 (4.7)              | 49,775 [24.9] (221)       | 0.7 (1.7)                      |
| 2H19C20-40-23 | 6,869 (30,553)           | 2.9 (7.5)              | 75,398 [37.7] (335)       | 0.7 (1.7)                      | 2H19C25-40-23 | 10,072 (44,800)          | 1.8 (4.7)              | 75,398 [37.7] (335)       | 0.5 (1.3)                      |
| 2H19C20-50-23 | 6,819 (30,331)           | 2.9 (7.5)              | 117,810 [58.9] (524)      | 0.4 (1.1)                      | 2H19C25-50-23 | 10,022 (44,578)          | 1.8 (4.7)              | 117,810 [58.9] (524)      | 0.4 (.9)                       |
| 2H19C20-60-23 | 6,794 (30,219)           | 2.9 (7.5)              | 169,646 [84.8] (755)      | 0.3 (.8)                       | 2H19C25-60-23 | 9,997 (44,467)           | 1.8 (4.7)              | 169,646 [84.8] (755)      | 0.3 (.7)                       |
| 2H19C20-32-27 | 6,894 (30,664)           | 4.0 (10.1)             | 49,775 [24.9] (221)       | 1.3 (3.3)                      | 2H19C25-32-27 | 10,097 (44,912)          | 2.5 (6.3)              | 49,775 [24.9] (221)       | 0.9 (2.3)                      |
| 2H19C20-40-27 | 6,869 (30,553)           | 4.0 (10.1)             | 75,398 [37.7] (335)       | 0.9 (2.2)                      | 2H19C25-40-27 | 10,072 (44,800)          | 2.5 (6.3)              | 75,398 [37.7] (335)       | 0.7 (1.7)                      |
| 2H19C20-50-27 | 6,819 (30,331)           | 4.0 (10.1)             | 117,810 [58.9] (524)      | 0.6 (1.5)                      | 2H19C25-50-27 | 10,022 (44,578)          | 2.5 (6.3)              | 117,810 [58.9] (524)      | 0.5 (1.2)                      |
| 2H19C20-60-27 | 6,794 (30,219)           | 4.0 (10.1)             | 169,646 [84.8] (755)      | 0.4 (1.0)                      | 2H19C25-60-27 | 9,997 (44,467)           | 2.5 (6.3)              | 169,646 [84.8] (755)      | 0.4 (.9)                       |
| 2H19C20-32-31 | 6,894 (30,664)           | 5.4 (13.8)             | 49,775 [24.9] (221)       | 1.4 (3.6)                      | 2H19C25-32-31 | 10,097 (44,912)          | 3.4 (8.7)              | 49,775 [24.9] (221)       | 1.2 (3.1)                      |
| 2H19C20-40-31 | 6,869 (30,553)           | 5.4 (13.8)             | 75,398 [37.7] (335)       | 1.0 (2.6)                      | 2H19C25-40-31 | 10,072 (44,800)          | 3.4 (8.7)              | 75,398 [37.7] (335)       | 0.9 (2.4)                      |
| 2H19C20-50-31 | 6,819 (30,331)           | 5.4 (13.8)             | 117,810 [58.9] (524)      | 0.7 (1.8)                      | 2H19C25-50-31 | 10,022 (44,578)          | 3.4 (8.7)              | 117,810 [58.9] (524)      | 0.7 (1.7)                      |
| 2H19C20-60-31 | 6,794 (30,219)           | 5.4 (13.8)             | 169,646 [84.8] (755)      | 0.5 (1.3)                      | 2H19C25-60-31 | 9,997 (44,467)           | 3.4 (8.7)              | 169,646 [84.8] (755)      | 0.5 (1.2)                      |
| 2H19C20-32-34 | 6,624 (29,467)           | 7.2 (18.3)             | 47,880 [23.9] (213)       | 1.9 (4.8)                      | 2H19C25-32-34 | 9,705 (43,172)           | 4.5 (11.5)             | 47,880 [23.9] (213)       | 1.6 (4.1)                      |
| 2H19C20-40-34 | 6,599 (29,356)           | 7.2 (18.3)             | 72,528 [36.3] (323)       | 1.4 (3.5)                      | 2H19C25-40-34 | 9,680 (43,061)           | 4.5 (11.5)             | 72,528 [36.3] (323)       | 1.2 (3.1)                      |
| 2H19C20-50-34 | 6,549 (29,133)           | 7.2 (18.3)             | 113,324 [56.7] (504)      | 0.9 (2.4)                      | 2H19C25-50-34 | 9,630 (42,838)           | 4.5 (11.5)             | 113,324 [56.7] (504)      | 0.9 (2.2)                      |
| 2H19C20-60-34 | 6,524 (29,022)           | 7.2 (18.3)             | 163,187 [81.6] (726)      | 0.7 (1.7)                      | 2H19C25-60-34 | 9,605 (42,727)           | 4.5 (11.5)             | 163,187 [81.6] (726)      | 0.6 (1.6)                      |
| 2H19C20-32-36 | 5,193 (23,100)           | 9.1 (23.1)             | 37,800 [18.9] (168)       | 2.4 (6.0)                      | 2H19C25-32-36 | 7,625 (33,919)           | 5.7 (14.5)             | 37,800 [18.9] (168)       | 2.1 (5.2)                      |
| 2H19C20-40-36 | 5,168 (22,988)           | 9.1 (23.1)             | 57,259 [28.6] (255)       | 1.7 (4.4)                      | 2H19C25-40-36 | 7,600 (33,808)           | 5.7 (14.5)             | 57,259 [28.6] (255)       | 1.6 (3.9)                      |
| 2H19C20-50-36 | 5,118 (22,766)           | 9.1 (23.1)             | 89,467 [44.7] (398)       | 1.2 (3.0)                      | 2H19C25-50-36 | 7,550 (33,586)           | 5.7 (14.5)             | 89,467 [44.7] (398)       | 1.1 (2.8)                      |
| 2H19C20-60-36 | 5,093 (22,655)           | 9.1 (23.1)             | 128,832 [64.4] (573)      | 0.9 (2.2)                      | 2H19C25-60-36 | 7,525 (33,474)           | 5.7 (14.5)             | 128,832 [64.4] (573)      | 0.8 (2.1)                      |

**2H19C10-50-31**

'2' – Two high load cylinders  
 'H' – HSHF  
 '19' – 190mm Motor  
 'C10' – 1.0in high speed cylinder  
 '50' – 5.0in high load cylinder  
 '31' – 31 pump

|               |               |
|---------------|---------------|
| 2H19C10-32-31 | 1,261 (5,608) |
| 2H19C10-40-31 | 1,236 (5,497) |
| 2H19C10-50-31 | 1,186 (5,275) |
| 2H19C10-60-31 | 1,161 (5,164) |
| 2H19C10-32-34 | 1,206 (5,365) |
| 2H19C10-40-34 | 1,181 (5,254) |
| 2H19C10-50-34 | 1,131 (5,032) |
| 2H19C10-60-34 | 1,106 (4,920) |

- HSHF Notes:
- Rated for continuous duty
  - Momentary load <2sec
  - Adjustable High Force Stroke
  - Adjustable High Speed Stroke