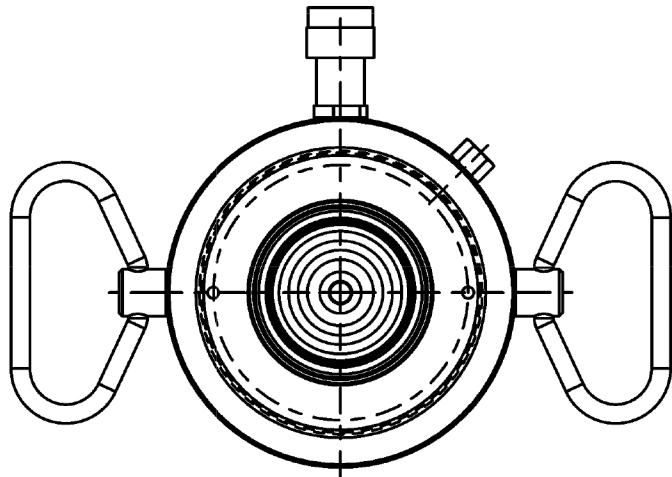
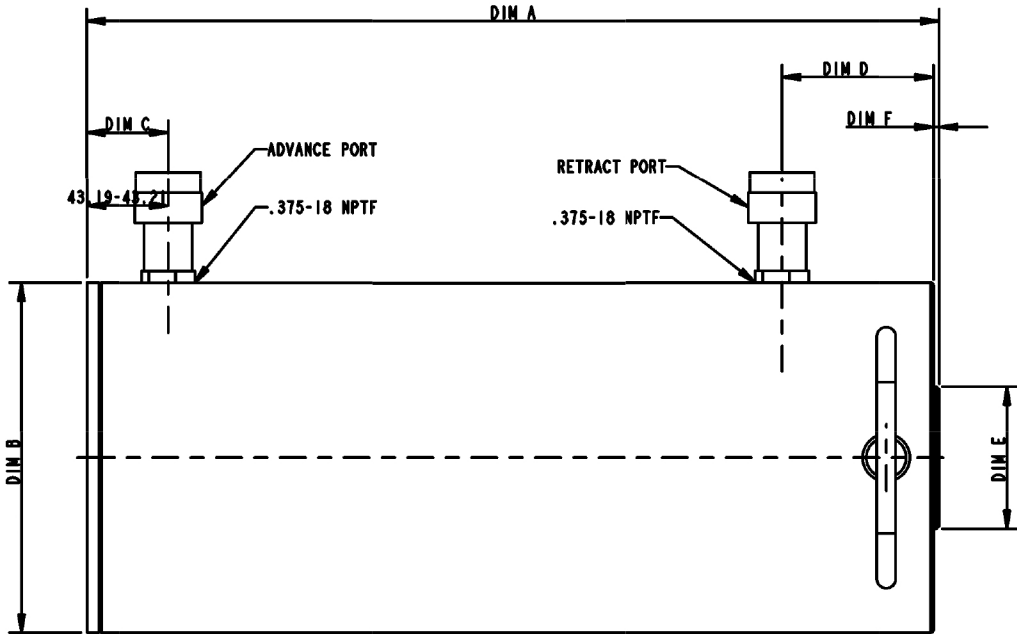
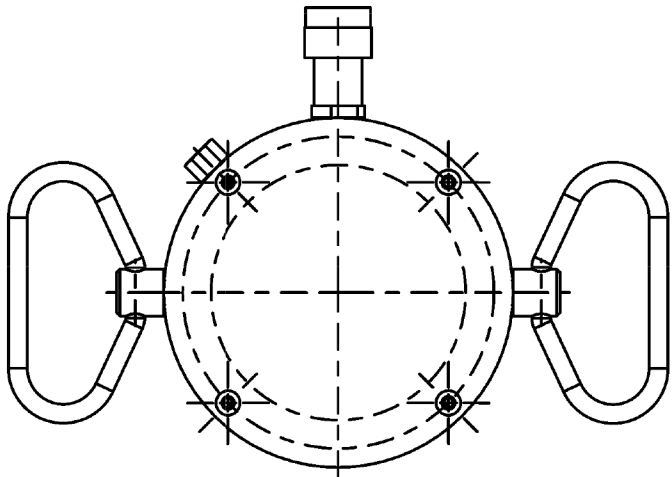


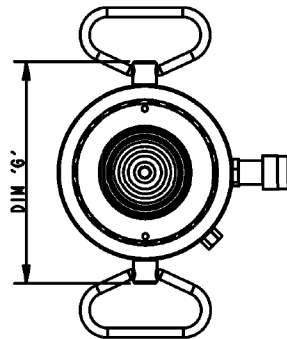
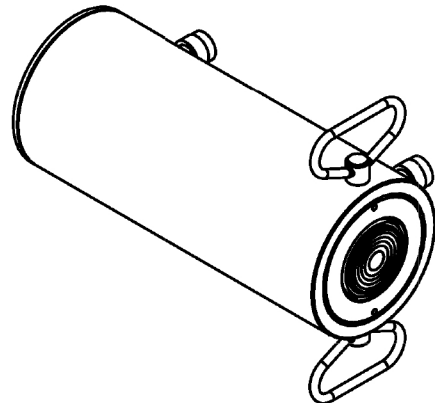
| REVISION HISTORY |         |              |
|------------------|---------|--------------|
| REV              | ECN #   | DATE/INITIAL |
| A                | 0301022 | 11-10-02/CF  |
| B                | 0304060 | 06-17-03/CF  |
| C                | 0311032 | 11-24-03/FDS |



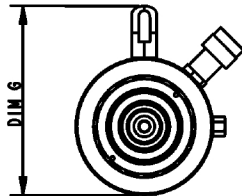
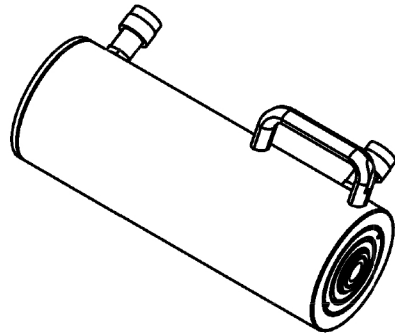
MODEL RAR10010 SHOWN  
SCALE 1:2

NOTES:  
1. DIMENSIONS ARE REFERENCE ONLY.

| MODEL NUMBER | NOMINAL CYLINDER CAPACITY ADV/RET TONS | STROKE |      | MAX CYLINDER CAPACITY ADV/RET (TONS) |          | CYLINDER EFFECTIVE AREA ADV RET |                   | OIL CAPACITY    |                   | COLLAPSED HEIGHT DIM A |       | EXTENDED HEIGHT |       | OUTSIDE DIAMETER DIM B |      | CYLINDER BORE DIAMETER |      | PLUNGER DIAMETER |      | BASE TO ADVANCE PORT DIM C |      | BASE TO RETRACT PORT DIM D |      | SADDLE DIAMETER DIM E |      | SADDLE PROTRUSION HEIGHT DIM F |      | HANDLE PROTRUSION OVERALL DIM G |       | WEIGHT |       |
|--------------|----------------------------------------|--------|------|--------------------------------------|----------|---------------------------------|-------------------|-----------------|-------------------|------------------------|-------|-----------------|-------|------------------------|------|------------------------|------|------------------|------|----------------------------|------|----------------------------|------|-----------------------|------|--------------------------------|------|---------------------------------|-------|--------|-------|
|              |                                        | mm     | INCH | METRIC                               | IMPERIAL | mm <sup>2</sup>                 | INCH <sup>2</sup> | cm <sup>3</sup> | INCH <sup>3</sup> | mm                     | INCH  | mm              | INCH  | mm                     | INCH | mm                     | INCH | mm               | INCH | mm                         | INCH | mm                         | INCH | mm                    | INCH | mm                             | INCH | mm                              | INCH  | Kg     | LBS   |
|              |                                        | mm     | INCH | METRIC                               | IMPERIAL | mm <sup>2</sup>                 | INCH <sup>2</sup> | cm <sup>3</sup> | INCH <sup>3</sup> | mm                     | INCH  | mm              | INCH  | mm                     | INCH | mm                     | INCH | mm               | INCH | mm                         | INCH | mm                         | INCH | mm                    | INCH | mm                             | INCH | mm                              | INCH  | Kg     | LBS   |
| RAR202       | 20                                     | 50.0   | 1.97 | 22.3                                 | 24.2     | 3117.2                          | 4.83              | 155.9           | 9.52              | 189.2                  | 7.45  | 239.2           | 9.42  | 113.0                  | 4.45 | 63.0                   | 2.48 | 40.0             | 1.58 | 30.2                       | 1.19 | 50.0                       | 1.97 | 30.0                  | 1.18 | 3.0                            | .12  | 168.0                           | 6.61  | 7.4    | 16.31 |
| RAR204       |                                        | 100.0  | 3.94 |                                      |          |                                 |                   | 311.7           | 19.03             | 239.2                  | 9.42  | 339.2           | 13.35 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 8.0    | 17.64 |
| RAR206       |                                        | 150.0  | 5.91 |                                      |          |                                 |                   | 467.6           | 28.55             | 289.2                  | 11.29 | 439.2           | 17.29 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 8.6    | 18.96 |
| RAR208       |                                        | 200.0  | 7.87 |                                      |          |                                 |                   | 623.4           | 38.01             | 339.2                  | 13.35 | 539.2           | 21.23 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 9.2    | 20.28 |
| RAR2010      |                                        | 250.0  | 9.84 |                                      |          |                                 |                   | 779.3           | 47.53             | 389.2                  | 15.32 | 639.2           | 25.17 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 9.8    | 21.61 |
| RAR302       | 30                                     | 50.0   | 1.97 | 31.5                                 | 34.2     | 4417.9                          | 6.85              | 220.9           | 13.49             | 201.2                  | 7.92  | 251.2           | 9.89  | 125.0                  | 4.92 | 75.0                   | 2.95 | 50.0             | 1.97 | 30.2                       | 1.19 | 55.0                       | 2.17 | 40.0                  | 1.58 | 3.0                            | .12  | 180.0                           | 7.09  | 8.6    | 18.96 |
| RAR304       |                                        | 100.0  | 3.94 |                                      |          |                                 |                   | 441.8           | 26.99             | 251.2                  | 9.89  | 351.2           | 13.83 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 9.5    | 20.94 |
| RAR306       |                                        | 150.0  | 5.91 |                                      |          |                                 |                   | 662.7           | 40.48             | 301.2                  | 11.86 | 451.2           | 17.76 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 10.4   | 22.93 |
| RAR308       |                                        | 200.0  | 7.87 |                                      |          |                                 |                   | 883.6           | 53.91             | 351.2                  | 13.83 | 551.2           | 21.70 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 11.3   | 24.91 |
| RAR3010      |                                        | 250.0  | 9.84 |                                      |          |                                 |                   | 1104.5          | 67.40             | 401.2                  | 15.80 | 651.2           | 25.64 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 12.2   | 26.90 |
| RAR502       | 50                                     | 50.0   | 1.97 | 50.6                                 | 54.9     | 7088.2                          | 10.99             | 354.4           | 21.65             | 201.2                  | 7.92  | 251.2           | 9.89  | 145.0                  | 5.71 | 95.0                   | 3.74 | 75.0             | 2.95 | 30.2                       | 1.19 | 56.0                       | 2.21 | 50.0                  | 1.97 | 3.0                            | .12  | 200.0                           | 7.87  | 11.1   | 24.47 |
| RAR504       |                                        | 100.0  | 3.94 |                                      |          |                                 |                   | 708.8           | 43.30             | 251.2                  | 9.89  | 351.2           | 13.83 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 12.7   | 28.0  |
| RAR506       |                                        | 150.0  | 5.91 |                                      |          |                                 |                   | 1063.2          | 64.95             | 301.2                  | 11.86 | 451.2           | 17.76 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 14.3   | 31.53 |
| RAR508       |                                        | 200.0  | 7.87 |                                      |          |                                 |                   | 1417.6          | 86.49             | 351.2                  | 13.83 | 551.2           | 21.70 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 15.9   | 35.05 |
| RAR5010      |                                        | 250.0  | 9.84 |                                      |          |                                 |                   | 1772.1          | 108.14            | 401.2                  | 15.80 | 651.2           | 25.64 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 17.5   | 38.58 |
| RAR1002      | 100                                    | 50.0   | 1.97 | 102.2                                | 110.9    | 14313.9                         | 22.19             | 715.7           | 43.71             | 251.2                  | 9.89  | 301.2           | 11.86 | 185.0                  | 7.28 | 135.0                  | 5.32 | 90.0             | 3.54 | 43.2                       | 1.70 | 80.0                       | 3.15 | 75.0                  | 2.95 | 3.0                            | .12  | 235.0                           | 9.25  | 16.4   | 36.16 |
| RAR1004      |                                        | 100.0  | 3.94 |                                      |          |                                 |                   | 1431.4          | 87.43             | 301.2                  | 11.86 | 401.2           | 15.80 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 19.3   | 42.55 |
| RAR1006      |                                        | 150.0  | 5.91 |                                      |          |                                 |                   | 2147.1          | 131.14            | 351.2                  | 13.83 | 501.2           | 19.73 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 22.2   | 48.94 |
| RAR1008      |                                        | 200.0  | 7.87 |                                      |          |                                 |                   | 2862.8          | 174.64            | 401.2                  | 15.80 | 601.2           | 23.67 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 25.1   | 55.34 |
| RAR10010     |                                        | 250.0  | 9.84 |                                      |          |                                 |                   | 3578.5          | 218.35            | 451.2                  | 17.76 | 701.2           | 27.61 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 28.0   | 61.73 |
| RAR1502      | 150                                    | 50.0   | 1.97 | 162.1                                | 175.9    | 22698.0                         | 35.18             | 1134.9          | 69.30             | 248.2                  | 9.77  | 298.2           | 11.74 | 230.0                  | 9.06 | 170.0                  | 6.70 | 110.0            | 4.33 | 38.2                       | 1.50 | 75.0                       | 2.95 | 94.0                  | 3.70 | 3.0                            | .12  | 280.0                           | 11.02 | 24.2   | 53.35 |
| RAR1504      |                                        | 100.0  | 3.94 |                                      |          |                                 |                   | 2269.8          | 136.61            | 298.2                  | 11.74 | 398.2           | 16.68 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 28.9   | 63.71 |
| RAR1506      |                                        | 150.0  | 5.91 |                                      |          |                                 |                   | 3404.7          | 207.91            | 348.2                  | 13.71 | 498.2           | 19.61 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 33.2   | 73.19 |
| RAR1508      |                                        | 200.0  | 7.87 |                                      |          |                                 |                   | 4539.6          | 276.87            | 398.2                  | 15.68 | 598.2           | 23.55 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 37.9   | 83.56 |
| RAR15010     |                                        | 250.0  | 9.84 |                                      |          |                                 |                   | 5674.5          | 346.17            | 498.2                  | 19.61 | 748.2           | 29.46 |                        |      |                        |      |                  |      |                            |      |                            |      |                       |      |                                |      |                                 |       | 42.6   | 93.92 |



RAR 100/150 SERIES  
SCALE 1:4



RAR 20/30/50  
SCALE 1:4

|                        |  |                                                                                                                                |  |              |  |             |  |          |  |                 |  |
|------------------------|--|--------------------------------------------------------------------------------------------------------------------------------|--|--------------|--|-------------|--|----------|--|-----------------|--|
| THIRD ANGLE PROJECTION |  | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:                                                            |  | DATE         |  | DRAWN BY:CF |  | 11/18/02 |  | TOLERANCES ARE: |  |
| FIRST ANGLE PROJECTION |  | FRACTIONS                                                                                                                      |  | CHECKED: FDS |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
| MATERIAL:              |  | DO NOT SCALE DRAWING                                                                                                           |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
| FINISH:                |  | THIS PRINT AND INFORMATION HEREIN IS THE PROPERTY OF ENERPAC. IT IS NOT TO BE COPIED OR REPRODUCED WITHOUT WRITTEN PERMISSION. |  | CHECKED: FDS |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
| TREATMENT:             |  | TITLE                                                                                                                          |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
|                        |  | RAR ALUMINUM CYLINDER                                                                                                          |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
|                        |  | SIZE D                                                                                                                         |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
|                        |  | SCALE 1:2                                                                                                                      |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
|                        |  | PRO/E                                                                                                                          |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
|                        |  | 1 of 1                                                                                                                         |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
|                        |  | ID10790                                                                                                                        |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |
|                        |  | ID10790                                                                                                                        |  | DRAWN: FDS   |  | DATE        |  | 02-03-03 |  | TOLERANCES ARE: |  |