



(800) 248-8498

## Diesel Hammer Energy Output and Pile Bearing Chart

### APE Model D25-21 Diesel Impact Hammer

The energy output is based on the identical Piston/Travel calculations utilized in the FHWA Gates Formula.  
 The pile bearing chart is based on the FHWA Gates Formula for pile bearing and is provided for the user's convenience only.

$$\text{Pile Bearing (metric tons)} = (((1.75 * \text{SQRT "E" LOG}_{10}(10N) - 100) / 2000) * 0.00045359237$$

*E = Developed Energy and N = Number of Blows Per Inch*

**APE has no preference for these particular formulas and calculations over any other.**

Enter Ram Weight in kgs:      4,600

| Blows<br>(per minute) | Stroke<br>(m) | Energy<br>(kNm) | Pile Set (Blows per cm) |     |      |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |
|-----------------------|---------------|-----------------|-------------------------|-----|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
|                       |               |                 | 2.5                     | 5.1 | 7.62 | 10  | 13  | 15  | 18  | 20  | 23  | 25  | 28   | 30   | 33   | 36   | 38   | 41   | 43   | 46   | 48   |
| 60                    | 1.22          | 29.91           | 302                     | 361 | 402  | 434 | 460 | 482 | 501 | 518 | 533 | 547 | 559  | 571  | 581  | 591  | 601  | 609  | 617  | 625  | 633  |
| 59                    | 1.27          | 31.14           | 311                     | 370 | 413  | 445 | 472 | 494 | 514 | 531 | 547 | 561 | 573  | 585  | 596  | 606  | 615  | 624  | 633  | 640  | 648  |
| 58                    | 1.32          | 32.36           | 320                     | 380 | 423  | 456 | 484 | 507 | 526 | 544 | 560 | 574 | 587  | 599  | 610  | 620  | 630  | 639  | 647  | 655  | 663  |
| 57                    | 1.37          | 33.59           | 328                     | 390 | 433  | 467 | 495 | 518 | 539 | 557 | 573 | 587 | 600  | 612  | 624  | 634  | 644  | 653  | 662  | 670  | 678  |
| 56                    | 1.42          | 34.81           | 336                     | 399 | 444  | 478 | 506 | 530 | 551 | 569 | 585 | 600 | 613  | 626  | 637  | 648  | 658  | 667  | 676  | 685  | 692  |
| 55                    | 1.47          | 36.04           | 344                     | 408 | 454  | 489 | 517 | 542 | 563 | 581 | 598 | 613 | 626  | 639  | 651  | 662  | 672  | 681  | 690  | 699  | 707  |
| 54                    | 1.52          | 37.27           | 352                     | 417 | 463  | 499 | 528 | 553 | 574 | 593 | 610 | 625 | 639  | 652  | 664  | 675  | 685  | 695  | 704  | 713  | 721  |
| 53                    | 1.58          | 38.74           | 362                     | 428 | 475  | 511 | 541 | 566 | 588 | 607 | 624 | 640 | 654  | 667  | 679  | 690  | 701  | 711  | 720  | 729  | 737  |
| 52                    | 1.62          | 39.72           | 368                     | 435 | 482  | 519 | 549 | 575 | 597 | 616 | 634 | 650 | 664  | 677  | 689  | 701  | 711  | 721  | 731  | 740  | 748  |
| 51                    | 1.68          | 41.19           | 377                     | 445 | 494  | 531 | 562 | 588 | 610 | 630 | 648 | 664 | 678  | 692  | 704  | 716  | 727  | 737  | 747  | 756  | 764  |
| 50                    | 1.75          | 42.90           | 387                     | 457 | 506  | 545 | 576 | 602 | 625 | 646 | 664 | 680 | 695  | 709  | 721  | 733  | 744  | 755  | 765  | 774  | 783  |
| 49                    | 1.83          | 44.87           | 399                     | 470 | 521  | 560 | 592 | 619 | 642 | 663 | 682 | 698 | 714  | 728  | 741  | 753  | 764  | 775  | 785  | 794  | 803  |
| 48                    | 1.91          | 46.83           | 410                     | 483 | 535  | 575 | 607 | 635 | 659 | 680 | 699 | 716 | 732  | 746  | 759  | 772  | 783  | 794  | 805  | 814  | 823  |
| 47                    | 1.98          | 48.54           | 420                     | 494 | 547  | 587 | 621 | 649 | 673 | 695 | 714 | 731 | 747  | 762  | 776  | 788  | 800  | 811  | 821  | 831  | 841  |
| 46                    | 2.08          | 50.99           | 434                     | 510 | 564  | 605 | 639 | 668 | 693 | 715 | 735 | 753 | 769  | 784  | 798  | 811  | 823  | 834  | 845  | 855  | 865  |
| 45                    | 2.19          | 53.69           | 448                     | 526 | 582  | 624 | 659 | 689 | 715 | 737 | 758 | 776 | 793  | 808  | 822  | 835  | 848  | 859  | 870  | 881  | 891  |
| 44                    | 2.29          | 56.14           | 461                     | 541 | 598  | 641 | 677 | 707 | 734 | 757 | 778 | 796 | 813  | 829  | 844  | 857  | 870  | 882  | 893  | 904  | 914  |
| 43                    | 2.39          | 58.59           | 474                     | 555 | 613  | 658 | 695 | 725 | 752 | 776 | 797 | 816 | 834  | 850  | 865  | 878  | 891  | 904  | 915  | 926  | 936  |
| 42                    | 2.49          | 61.05           | 487                     | 570 | 629  | 674 | 712 | 743 | 770 | 795 | 816 | 836 | 854  | 870  | 885  | 899  | 912  | 925  | 937  | 948  | 958  |
| 41                    | 2.62          | 64.23           | 502                     | 588 | 648  | 695 | 733 | 766 | 794 | 818 | 841 | 861 | 879  | 896  | 911  | 926  | 939  | 952  | 964  | 975  | 986  |
| 40                    | 2.74          | 67.18           | 517                     | 604 | 666  | 713 | 753 | 786 | 814 | 840 | 862 | 883 | 902  | 919  | 935  | 950  | 963  | 976  | 989  | 1000 | 1011 |
| 39                    | 2.90          | 71.10           | 535                     | 625 | 688  | 738 | 778 | 812 | 842 | 868 | 891 | 912 | 931  | 949  | 965  | 981  | 995  | 1008 | 1021 | 1033 | 1044 |
| 38                    | 3.05          | 74.78           | 552                     | 644 | 709  | 760 | 801 | 836 | 866 | 893 | 917 | 938 | 958  | 976  | 993  | 1009 | 1023 | 1037 | 1050 | 1062 | 1074 |
| 37                    | 3.20          | 78.45           | 569                     | 663 | 729  | 781 | 824 | 859 | 890 | 918 | 942 | 964 | 985  | 1003 | 1020 | 1036 | 1051 | 1065 | 1079 | 1091 | 1103 |
| 36                    | 3.40          | 83.36           | 590                     | 687 | 756  | 809 | 853 | 890 | 922 | 950 | 975 | 998 | 1019 | 1038 | 1056 | 1072 | 1088 | 1102 | 1116 | 1129 | 1141 |