



(800) 248-8498

Diesel Hammer Energy Output and Pile Bearing Chart

APE Model D50-52 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.

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

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

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

Ram Weight (lbs): 11,025

| Blows (per minute) | Stroke (ft) | Energy (ft-lbs) | Pile Set (Blows per inch) *Measured in Tons | | | | | | | | | | | | | | | | | | |
|-----------------------|----------------|--------------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 60 | 4.00 | 44,100 | 189 | 221 | 244 | 262 | 277 | 289 | 300 | 309 | 318 | 325 | 332 | 338 | 344 | 350 | 355 | 360 | 364 | 369 | 373 |
| 59 | 4.17 | 45,974 | 194 | 227 | 251 | 269 | 284 | 296 | 307 | 317 | 325 | 333 | 340 | 347 | 353 | 358 | 364 | 368 | 373 | 378 | 382 |
| 58 | 4.33 | 47,738 | 199 | 232 | 256 | 275 | 290 | 303 | 314 | 324 | 332 | 340 | 347 | 354 | 360 | 366 | 371 | 376 | 381 | 386 | 390 |
| 57 | 4.50 | 49,613 | 204 | 238 | 262 | 281 | 297 | 310 | 321 | 331 | 340 | 348 | 355 | 362 | 368 | 374 | 380 | 385 | 390 | 394 | 398 |
| 56 | 4.67 | 51,487 | 208 | 243 | 268 | 287 | 303 | 316 | 328 | 338 | 347 | 355 | 363 | 370 | 376 | 382 | 388 | 393 | 398 | 402 | 407 |
| 55 | 4.83 | 53,251 | 213 | 248 | 273 | 293 | 309 | 323 | 334 | 345 | 354 | 362 | 370 | 377 | 383 | 389 | 395 | 400 | 405 | 410 | 415 |
| 54 | 5.00 | 55,125 | 217 | 253 | 279 | 299 | 315 | 329 | 341 | 351 | 361 | 369 | 377 | 384 | 391 | 397 | 403 | 408 | 413 | 418 | 423 |
| 53 | 5.17 | 56,999 | 222 | 259 | 285 | 305 | 321 | 335 | 348 | 358 | 368 | 376 | 384 | 392 | 398 | 405 | 410 | 416 | 421 | 426 | 431 |
| 52 | 5.33 | 58,763 | 226 | 263 | 290 | 310 | 327 | 341 | 354 | 365 | 374 | 383 | 391 | 398 | 405 | 412 | 418 | 423 | 428 | 433 | 438 |
| 51 | 5.50 | 60,638 | 230 | 268 | 295 | 316 | 333 | 348 | 360 | 371 | 381 | 390 | 398 | 405 | 412 | 419 | 425 | 431 | 436 | 441 | 446 |
| 50 | 5.75 | 63,394 | 237 | 275 | 303 | 324 | 342 | 356 | 369 | 381 | 391 | 400 | 408 | 416 | 423 | 429 | 436 | 441 | 447 | 452 | 457 |
| 49 | 6.00 | 66,150 | 243 | 282 | 311 | 332 | 350 | 365 | 378 | 390 | 400 | 409 | 418 | 426 | 433 | 440 | 446 | 452 | 458 | 463 | 468 |
| 48 | 6.25 | 68,906 | 249 | 289 | 318 | 340 | 358 | 374 | 387 | 399 | 409 | 419 | 428 | 436 | 443 | 450 | 456 | 462 | 468 | 473 | 479 |
| 47 | 6.50 | 71,663 | 255 | 296 | 325 | 348 | 367 | 382 | 396 | 408 | 418 | 428 | 437 | 445 | 453 | 460 | 466 | 472 | 478 | 484 | 489 |
| 46 | 6.83 | 75,301 | 262 | 305 | 335 | 358 | 377 | 393 | 407 | 419 | 430 | 440 | 449 | 458 | 465 | 472 | 479 | 486 | 492 | 497 | 502 |
| 45 | 7.17 | 79,049 | 270 | 313 | 344 | 368 | 387 | 404 | 418 | 431 | 442 | 452 | 462 | 470 | 478 | 485 | 492 | 499 | 505 | 511 | 516 |
| 44 | 7.50 | 82,688 | 277 | 322 | 353 | 377 | 397 | 414 | 429 | 442 | 453 | 464 | 473 | 482 | 490 | 498 | 505 | 511 | 517 | 523 | 529 |
| 43 | 7.83 | 86,326 | 284 | 330 | 362 | 387 | 407 | 424 | 439 | 452 | 464 | 475 | 485 | 493 | 502 | 509 | 517 | 523 | 530 | 536 | 542 |
| 42 | 8.17 | 90,074 | 292 | 338 | 371 | 396 | 417 | 435 | 450 | 463 | 475 | 486 | 496 | 505 | 514 | 521 | 529 | 536 | 542 | 548 | 554 |
| 41 | 8.58 | 94,595 | 300 | 348 | 381 | 407 | 429 | 447 | 462 | 476 | 488 | 499 | 510 | 519 | 528 | 536 | 543 | 550 | 557 | 563 | 569 |
| 40 | 9.00 | 99,225 | 309 | 357 | 392 | 418 | 440 | 459 | 475 | 489 | 501 | 513 | 523 | 533 | 542 | 550 | 558 | 565 | 572 | 578 | 584 |
| 39 | 9.50 | 104,738 | 318 | 368 | 404 | 431 | 454 | 472 | 489 | 503 | 516 | 528 | 539 | 549 | 558 | 566 | 574 | 582 | 589 | 595 | 602 |
| 38 | 10.00 | 110,250 | 328 | 379 | 415 | 444 | 467 | 486 | 503 | 518 | 531 | 543 | 554 | 564 | 574 | 582 | 590 | 598 | 605 | 612 | 619 |
| 37 | 10.50 | 115,763 | 337 | 390 | 427 | 456 | 479 | 499 | 517 | 532 | 545 | 558 | 569 | 579 | 589 | 598 | 606 | 614 | 621 | 628 | 635 |
| 36 | 11.17 | 123,149 | 349 | 404 | 442 | 472 | 496 | 517 | 534 | 550 | 564 | 577 | 588 | 599 | 609 | 618 | 627 | 635 | 643 | 650 | 657 |