

# Chapter 27

## Camshafts And Valve Trains

Find the words in the grid. Words can go across, down and in the two forward diagonals.

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O C R M W H K T L B B H W Y M N T Q M E H Z B D T G L Q T Y N L P D G
V A K M V Z N C K H Y W J T K B E T N W T X M N H V N W B G Q R R N F
E M N T A R F Q C Q Y N Y R T P F I S Y M M E T R I C A L D L M B T M
R S C M L G V F J L R Y T K Y A G R D R J K M V L M K L K K Q R H R V
H H A Z V R V M R B Q C L T H N R A S O L I D V A L V E L I F T E R B
E A M P E N H N Z N D X N S E B E M V A L V E C A M P H A S E S M Q X
A F C Y O P N K T E Y I M G V R Y P R A S Y M M E T R I C A L M R K L
D T H K V J B L T L A A N V P L K R R O L L E R C H A I N T Y P E J S
V D U N E M B A L H C I H S L O B E D I S P L A C E M E N T A N G L E
A U C N R J R N C D L T E Z N V V N L R J L K T P F J N P D Q X L T A
L R K N L E W T A E V B R T Z L C H T N M L F J G N M V K B J Y V T T
V A I Q A J N E E M O J R G D Y S E Q E L A C N K T H M P X U D K P D
E T N K P E H H W L R M T L B F N C V Z H H I Z U K Z Q D Z L C V W U
H I G Q L R W N B R T J V T Q I I L A S K M P O Y V K Z G N O P K N R
R O Q I E E T R H K C L T K G R A N M V I V N J Y F H L M X B T X E A
X N S V E X R R M Y B P J N K V L A G T E U L T K M H Y O K E M B R T
P K O R P D C F W J Z Z E V L N C R E E R N R Z B B B T Y B S P K N I
C P F L Y M V V R G J E Q O T E M V B R R E G C T Z B J H L E T H L O
G A K M L L Y A K P C N R V T E L K O T W F R I J K T W V N P B F O N
R Q M Z J G W N L N M T X I P A C T L O H T O R N R P R W L A W X B M
W R W S K T K G E V N D S J V U A B L D Y J H L X G H D Q Y R K V E J
L H M V H Y H R F O E O Y E D C M L C A M I N B L O C K L M A T N C M
L L J A G A E R C L P F L M I L O P B Q M J P L J O W R K Q T Z L E K
N Y T L M F F L U M J B L D M F T T U T T L R K N T W L F Z I F F N H
V R T V R K I T O S A M N O M O P F Z P G J W Q D M W E O J O N L T X
L M W E P O V C B I T I N A A W R M R L P N X T L Q T H R B N L A E P
G Q T L M K N F R E L P C V K T B S C R T R K N K X R D B L E G T R T
T N R A M Y M A Y A A Q L D O U B L E R O L L E R C H A I N R L L S L
I M J S H Q V R T J W R Z A N R X J L T P Z G N C K D M D B Q Y I Q Y
M T Y H N W B O D B K M I Y T M M R Z M Y Z W Z W T B C W Q V H N F V
Y N P Z X V T L M W F K K N X E M Y H X B P Q V W M K D B V T B K Y T
D D M Q R Q G V C Z P S I N G L E O V E R H E A D C A M S H A F T W F
D U A L O V E R H E A D C A M S H A F T B D N B K Z G N K N K F Y B L
Z B H Y D R A U L I C V A L V E L I F T E R R K P Y H K P Y K V P D M
R H Y D R A U L I C L A S H A D J U S T E R S T L Z M M Q T P M E K X

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|------------------------|--------------------------|-------------------|--------------------------|
| Aerated                | Finger follower          | Lobe spread       | Single overhead camshaft |
| Asymmetrical           | Flat link type           | Morse type        | Solid valve lifter       |
| Bucket                 | Freewheeling engine      | Oil control valve | Symmetrical              |
| Cam chucking           | Hydraulic lash adjusters | Overhead camshaft | Thrust plate             |
| Cam follower           | Hydraulic valve lifter   | Overhead valve    | Total indicator runout   |
| Cam in block           | Interference engine      | Pump up           | Valve cam phases         |
| Camshaft bearings      | Lobe                     | Ramp              | Valve float              |
| Camshaft duration      | Lobe centers             | Roller chain type | Valve lash               |
| Composite camshaft     | Lobe displacement angle  | Scavenging        | Valve overlap            |
| Double roller chain    | Lobe lift                | Seat duration     | Variable valve timing    |
| Dual overhead camshaft | Lobe separation          | Silent chain type | VTEC                     |