

MANLEY VALVE LOCKS... SIMPLY THE BEST!

CONVENTIONAL vs BEAD LOC® VALVE STEM GROOVES

The groove in a valve stem, seemingly unimportant, in reality is vital to the success of a valve's performance. Imperfectly formed grooves, inferior or mismatched locks, and improper retainers can lead to catastrophic failure.

The so called "conventional" or square groove design has enjoyed enormous success. But the success of a "conventional" groove is dependent upon precise machining. First, the surface finish of the groove must be outstanding to guarantee against failure due to residual machining marks.

Next, the groove must have a precise .013" radius in the upper corner. Too small a radius leaves the groove subject to the dangers of a sharp fillet. Too large a radius leaves open the possibility of the groove being abraded in this area by the upper inside edge of the tang of the lock. Also, an oversized radius leaves a reduced horizontal shelf in the groove which is, or should be, the only contact point with the tang of the lock. Contact by the lock in the root of the groove is a disaster waiting to happen.

Perfectly formed "conventional" grooves with proper locks and retainers will deliver good service. However, there are sub-standard components on the market that can conspire to destroy a correctly machined groove.

The essence of the Bead Loc® groove is its simplicity and forgiveness. The groove itself is a straightforward .110" full radius. The contact points with a Bead Loc® radius lock are approximately 2:00 and 10:00 o'clock, not at the root of the groove. This system affords minimal vertical movement, especially when valve float is present, which means reduced erosion of the valve for enhanced service life.

Manley Performance supports both the "conventional" groove system and the Bead Loc® system with the most extensive line-up of the highest quality locks in the industry.

7° STAMPED VALVE LOCKS

✓ Stamped locks are recommended ONLY for mild performance engines

| Part No. | Quantity | Valve Stem | Groove Type | Wgt./Pr. |
|----------|----------|------------|--------------|----------|
| 13238-16 | 16 pr. | 5/16" | Conventional | 2.9 gms |
| 13127-16 | 16 pr. | 11/32" | Conventional | 3.2 gms |



7° MACHINED VALVE LOCKS

✓ Highest quality steel alloy

✓ Heat treated and black oxide finished

| Part No. | Quantity | Valve Stem | Groove Type | Wgt./Pr. |
|----------|----------|----------------|--|----------|
| 13086-32 | 32 pr. | .2345" | Bead Loc® Ford 5.0L "Coyote" (4 Valve) | 1.3 gms |
| 13088-24 | 24 pr. | .2345"-.2355" | Bead Loc® Ford Modular 4.6L (3 Valve) | 1.3 gms |
| 13089-16 | 16 pr. | .2740"-.2750" | Bead Loc® Ford Modular 4.6L/5.4L (2 Valve) | 1.9 gms |
| 13089-32 | 32 pr. | .2740"-.2750" | Bead Loc® Ford Modular 4.6L/5.4L (4 Valve) | 1.9 gms |
| 13087-16 | 16 pr. | 5/16" (.3120") | Bead Loc® Ford 6.2L "Raptor" (2 Valve) | 2.2 gms |
| 13093-16 | 16 pr. | 5/16" (.3125") | Bead Loc® Chrysler Hemi 5.7L/6.1L | 2.2 gms |
| 13098-16 | 16 pr. | 8mm (.3135") | Single Radius Chevy LS | 2.6 gms |
| 13090-16 | 16 pr. | 5/16" (.3100") | Conventional | 3.2 gms |
| 13091-16 | 16 pr. | 11/32" | Conventional | 3.0 gms |
| 13092-16 | 16 pr. | 3/8" | Conventional | 3.5 gms |



VALVE LOCKS

SUPER 7° VALVE LOCKS STEEL MATERIAL

- ✓ Heat treated and black oxide finished
- ✓ Highest quality steel alloy
- ✓ Thicker for greater strength



| Part No. | Quantity | Valve Stem | Installed Height | Groove Type | Wgt. / Pr. |
|-----------|----------|------------|------------------|--------------|------------|
| 13050-8 | 8 pr. | .3110" | .050" less | Bead Loc® | 8.2 gms |
| 13051-8 | 8 pr. | .3110" | Standard | Bead Loc® | 8.2 gms |
| 13052-8 | 8 pr. | .3110" | .050" more | Bead Loc® | 8.2 gms |
| 13080-16* | 16 pr. | .3110" | Standard | Conventional | 8.3 gms |
| 13085-16* | 16 pr. | .3110" | .050" more | Conventional | 8.2 gms |
| 13060-8 | 8 pr. | .3415" | .050" less | Bead Loc® | 7.4 gms |
| 13061-8 | 8 pr. | .3415" | Standard | Bead Loc® | 7.4 gms |
| 13062-8 | 8 pr. | .3415" | .050" more | Bead Loc® | 7.4 gms |
| 13081-16* | 16 pr. | .3415" | .050" less | Conventional | 9.9 gms |
| 13083-16* | 16 pr. | .3415" | Standard | Conventional | 7.5 gms |
| 13084-16* | 16 pr. | .3415" | .050" more | Conventional | 7.6 gms |



* Also available in quantities of 8 pairs. To order as a set of 8 pairs change the part number from a (-16) to a (-8).

SUPER 7° VALVE LOCKS TITANIUM MATERIAL

- ✓ Lightweight titanium material



| Part No. | Quantity | Valve Stem | Installed Height | Groove Type | Wgt. / Pr. |
|------------|----------|---------------|------------------|--------------|------------|
| 13030T-8 | 8 pr. | 7 mm / .2740" | .050" less | Bead Loc® | 5.6 gms |
| 13037T-8 | 8 pr. | 7 mm / .2740" | Standard | Bead Loc® | 4.9 gms |
| 13038T-8 | 8 pr. | 7 mm / .2740" | .050" more | Bead Loc® | 4.6 gms |
| 13050T-8 | 8 pr. | .3110" | .050" less | Bead Loc® | 4.5 gms |
| 13051T-8 | 8 pr. | .3110" | Standard | Bead Loc® | 4.5 gms |
| 13052T-8 | 8 pr. | .3110" | .050" more | Bead Loc® | 4.5 gms |
| 13061T-8 | 8 pr. | .3415" | Standard | Bead Loc® | 4.1 gms |
| 13062T-8 | 8 pr. | .3415" | .050" more | Bead Loc® | 4.1 gms |
| 13081T-16* | 16 pr. | .3415" | .050" less | Conventional | 5.5 gms |
| 13083T-16* | 16 pr. | .3415" | Standard | Conventional | 4.2 gms |
| 13084T-16* | 16 pr. | .3415" | .050" more | Conventional | 4.1 gms |



* Also available in quantities of 8 pairs. To order as a set of 8 pairs change the part number from a (-16) to a (-8).

SUPER 7° "CAPTIV-LOC" VALVE LOCKS

- ✓ Developed by Keith Dorton
- ✓ Encapsulates hard tip in titanium valve if it comes loose
- ✓ Use with valves with .290" to .330" tip lengths
- ✓ Available in steel and titanium material



| Part No. | Quantity | Valve Stem | Installed Height | Groove Type | Wgt. / Pr. | |
|-----------|------------|------------|------------------|-------------|--------------|---------------|
| --- | 13039T-8 | 8 pr. | .3110" | .050" less | Bead Loc® | 5.7 gms |
| 13033-8 | 13033T-8 | 8 pr. | .3110" | Standard | Bead Loc® | 9.5 / 5.6 gms |
| 13034-8 | 13034T-8 | 8 pr. | .3110" | .050" more | Bead Loc® | 9.4 / 5.3 gms |
| --- | 13040T-8 | 8 pr. | .3415" | .050" less | Bead Loc® | 5.0 gms |
| 13035-8 | 13035T-8 | 8 pr. | .3415" | Standard | Bead Loc® | 8.6 / 4.9 gms |
| 13036-8 | 13036T-8 | 8 pr. | .3415" | .050" more | Bead Loc® | 8.5 / 4.7 gms |
| 13031-16* | 13031T-16* | 16 pr. | .3415" | Standard | Conventional | 9.2 / 5.3 gms |
| 13032-16* | 13032T-16* | 16 pr. | .3415" | .050" more | Conventional | 9.3 / 5.0 gms |



* Also available in quantities of 8 pairs. To order as a set of 8 pairs change the part number from a (-16) to a (-8).

Note: New part numbers are **ITALICIZED**.

CYL HEAD COMPONENTS

SPORT COMPACT VALVE LOCKS

- ✓ Manufactured from premium quality heat treated steel
- ✓ Machined to exacting tolerances

| Part No. | Quantity | Description | Valve Stem | Groove Type | Angle | Wgt. / Pr. |
|----------|----------|---------------|------------------|-------------|-------|------------|
| 13010-8 | 8 pr. | Honda / Acura | 5.5 mm / .2165" | OEM Radius | 7° | 1.5 gms |
| 13012-8 | 8 pr. | Nissan | 6.0 mm / .2362" | OEM Radius | 6° | 1.4 gms |
| 13014-8 | 8 pr. | Toyota | 6.0 mm / .2362" | OEM Radius | 6° | 1.4 gms |
| 13016-8 | 8 pr. | Mitsubishi | 6.56 mm / .2581" | OEM Radius | 6° | 1.3 gms |



CYL HEAD COMPONENTS

PRECISION CRAFTED 10° MACHINED VALVE LOCKS STEEL MATERIAL

- ✓ Highest quality steel alloy
- ✓ Heat treated and black oxide finished

| Part No. | Quantity | Valve Stem | Installed Height | Groove Type | Wgt. / Pr. |
|-----------|----------|---------------|------------------|------------------------|------------|
| 13171-8 | 8 pr. | 7 mm / .2740" | .050" less | Bead Loc® | 7.4 gms |
| 13170-8 | 8 pr. | 7 mm / .2740" | Standard | Bead Loc® | 7.4 gms |
| 13172-8 | 8 pr. | 7 mm / .2740" | .050" more | Bead Loc® | 7.4 gms |
| 13190-8 | 8 pr. | .3075" | Standard | Bead Loc® | 6.7 gms |
| 13191-8 | 8 pr. | .3085" | Standard | Bead Loc® | 6.7 gms |
| 13193-16* | 16 pr. | .3085" | Standard | Conventional | 6.7 gms |
| 13151-8 | 8 pr. | .3110" | Standard | Bead Loc® | 7.0 gms |
| 13152-8 | 8 pr. | .3110" | .050" more | Bead Loc® | 6.4 gms |
| 13096-16* | 16 pr. | .3110" | Standard | Conventional | 6.7 gms |
| 13196-16* | 16 pr. | .3110" | .050" more | Conventional | 6.0 gms |
| 13153-16* | 16 pr. | 8 mm (.3135) | Standard | Single Radius Chevy LS | 6.6 gms |
| 13160-8 | 8 pr. | .3415" | .050" less | Bead Loc® | 6.8 gms |
| 13161-8 | 8 pr. | .3415" | Standard | Bead Loc® | 6.3 gms |
| 13162-8 | 8 pr. | .3415" | .050" more | Bead Loc® | 6.3 gms |
| 13097-16* | 16 pr. | .3415" | Standard | Conventional | 6.8 gms |
| 13194-16* | 16 pr. | .3415" | Standard | Conventional | 6.1 gms |
| 13198-16* | 16 pr. | .3415" | .050" more | Conventional | 5.6 gms |
| 13192-8 | 8 pr. | .3715" | Standard | Bead Loc® | 5.0 gms |
| 13195-16* | 16 pr. | .3715" | Standard | Conventional | 5.0 gms |



* Also available in quantities of 8 pairs. To order as a set of 8 pairs change the part number from a (-16) to a (-8).

Lock 13097 is NOT recessed to accept a wear cap.

PRECISION CRAFTED 10° MACHINED VALVE LOCKS TITANIUM MATERIAL

- ✓ Durable and lightweight

| Part No. | Quantity | Valve Stem | Installed Height | Groove Type | Wgt. / Pr. |
|------------|----------|---------------|------------------|--------------|------------|
| 13171T-8 | 8 pr. | 7 mm / .2740" | .050" less | Bead Loc® | 4.3 gms |
| 13151T-8 | 8 pr. | .3110" | Standard | Bead Loc® | 3.9 gms |
| 13152T-8 | 8 pr. | .3110" | .050" more | Bead Loc® | 3.6 gms |
| 13096T-16* | 16 pr. | .3110" | Standard | Conventional | 3.8 gms |
| 13161T-8 | 8 pr. | .3415" | Standard | Bead Loc® | 3.6 gms |
| 13162T-8 | 8 pr. | .3415" | .050" more | Bead Loc® | 3.6 gms |
| 13194T-16* | 16 pr. | .3415" | Standard | Conventional | 3.5 gms |
| 13198T-16* | 16 pr. | .3415" | .050" more | Conventional | 3.5 gms |



* Also available in quantities of 8 pairs. To order as a set of 8 pairs change the part number from a (-16) to a (-8).

LOCAP SYSTEM

MANLEY PERFORMANCE LOCAP SYSTEM

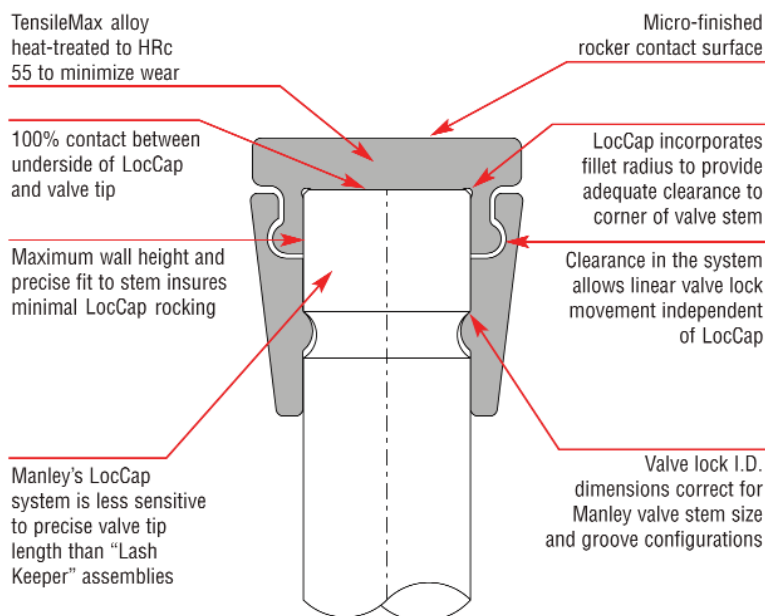
✓ The ULTIMATE valve lock/wear cap assembly ✓ Designed specifically for Fuel, Alcohol and Pro Mod Racers

First developed by our engineering team in the late 1990s for NASCAR applications, Manley's LocCap system is designed to retain the wear cap on the tip of the valve by employing an external bead on the wear cap that —when the system is assembled— resides within an internal "retention channel" located on the I.D. of the valve locks. Manley's valve train components group, headed by Manley GM Michael Tokarchik, refined the original designs combining a state-of-the-art steel alloy and ultra precise manufacturing techniques to achieve the goal of delivering a no compromises valve lock/wear cap assembly for the supercharged classes.

Manley's LocCap systems are available in true 7-degree as well as 10-degree assemblies for 11/32" and 3/8" stem valves in both Manley Bead Loc® and conventional square groove configurations. In addition, Manley's LocCap system retrofits to competitors' "Lash Keeper" assemblies, maintaining original valve spring installed height, valve overall length, valve tip length (0.250") and retainer designs.

Both the LocCap valve locks and wear caps are precision machined using Manley's TensileMax UHSS (ultra high strength steel). The wear caps are thru-hardened to HRc 55 (harder than typical tool steel) to minimize wear due to aggressive rocker contact. Manley's proprietary heat treatment processes minimize distortion, thereby improving the fit of the wear cap and valve locks to the valve stem.

For high RPM alcohol and Pro Mod racers desiring the lightest possible valve train mass, Manley also manufactures LocCap valve locks from high strength titanium alloy.



VALVE LOCKS

| Valve Stem Size | 7° Bead Loc | 7° Square Groove | 10° Bead Loc | 10° Square Groove |
|-----------------|-------------|------------------|--------------|-------------------|
| 5/16" (.3100") | ----- | ----- | 13441-8 | ----- |
| 11/32" (.3415") | 13361-8 | 13394-8 | 13461-8 | 13494-8 |
| 3/8" (.3715") | 13392-8 | 13395-8 | 13492-8 | 13495-8 |

LOCAPS

| Valve Stem Size | Part No. |
|-----------------|----------|
| 5/16" (.3100") | 42441-8 |
| 11/32" (.3415") | 42404-8 |
| 3/8" (.3715") | 42408-8 |

Note: -8 indicates one set of 8 pairs. Valve Locks are available in high strength titanium alloy. Add "T" suffix when ordering.

TITANIUM RETAINERS

| Valve Spring Type | Valve Spring Part No. | 7° +.100" Part No. | 10° Std. Part No. | 10° +.100" Part No. | 10° +.170" Part No. |
|------------------------|--------------------------------|---------------------|-------------------|---------------------|---------------------|
| Steel Double Springs | 221455, 221456, 221457, 221460 | 23675-8 23677-8* | 23684-8 | 23676-8 23679-8* | 23683-8* |
| Steel Double Springs | 221463 | ----- | ----- | 23686-8* | ----- |
| Steel Triple Springs | 221447, 221448, 221449, 221450 | 23673-8 | ----- | 23653-8 23753-8* | ----- |
| Titanium Double Spring | | ----- | ----- | 23668-8* | ----- |

Note: -8 indicates 8 pieces.

* Lightweight design high strength Ti-17 titanium material

CYL HEAD COMPONENTS

INSERTED TIPS

- ✓ Wear resistant steel alloy
- ✓ Ideal titanium valve tip protection



| Part No. | Quantity | Description | Knurl Diameter | Post Length |
|----------------|----------|---------------------------|----------------|-------------|
| 42311-8 | 8 pcs. | Fits .3085"-.3130" valves | .173" | .120" |
| 42105-8 | 8 pcs. | Fits 11/32" valves | .193" | .120" |

WEAR CAPS

- ✓ 4140 alloy steel
- ✓ Special heat treatment
- ✓ Non rotating caps afford less valve tip erosion



| Part No. | Quantity | Description | Minimum Tip | Type | Thickness |
|-----------------|----------|-----------------------------|-------------|--------------|-----------|
| 42263-8 | 8 pcs. | .2165" stem valves (5.5 mm) | .095" | Standard | .040" |
| 42254-8 | 8 pcs. | .2360" stem valves (6 mm) | .275" | Non Rotating | .060" |
| 42264-8 | 8 pcs. | .2360" stem valves (6 mm) | .095" | Standard | .040" |
| 42100-8 | 8 pcs. | .2740" stem valves (7 mm) | .250" | Standard | .085" |
| 42118-8 | 8 pcs. | .2740" stem valves (7 mm) | .290" | Non Rotating | .080" |
| 42110-8 | 8 pcs. | .2754" stem valves (7 mm) | .250" | Standard | .085" |
| 42101-16 | 16 pcs. | .3085" stem valves (5/16") | .250" | Standard | .080" |
| 42139-8 | 8 pcs. | .3110" stem valves (5/16") | .250" | Standard | .080" |
| 42300-8 | 8 pcs. | .3110" stem valves (5/16") | .250" | Non Rotating | .080" |
| 42125-8 | 8 pcs. | .3130" stem valves (8 mm) | .130" | Standard | .080" |
| 42104-16 | 16 pcs. | .3415" stem valves (11/32") | .250" | Standard | .080" |
| 42301-8 | 8 pcs. | .3415" stem valves (11/32") | .250" | Non Rotating | .080" |
| 42108-16 | 16 pcs. | .3715" stem valves (3/8") | .220" | Standard | .080" |

TENSILEMAX WEAR CAPS

- ✓ Precision machined from TensileMax UHSS (Ultra High Strength Steel)
- ✓ Thru-hardened to HRc55 to minimize wear due to aggressive rocker contact
- ✓ Proprietary heat treatment processes minimize distortion

| Part No. | Quantity | Description | Minimum Tip | Type | Thickness |
|-------------------|----------|-----------------------------|-------------|----------|-----------|
| 42100TM-8 | 8 pcs. | .2740" stem valves (7mm) | .250" | Standard | .085" |
| 42139TM-8 | 8 pcs. | .3110" stem valves (5/16") | .250" | Standard | .080" |
| 42104TM-16 | 16 pcs. | .3415" stem valves (11/32") | .250" | Standard | .080" |

Note: New part numbers are **ITALICIZED**.

VALVE STEM SEALS, GUIDES & CUTTERS

CYL HEAD COMPONENTS

VITON MATERIAL VALVE STEM SEALS

- ✓ A necessity when using NexTek® triple valve springs.
- ✓ Special design allows clearance inside small I.D. springs.

| Part No. | Quantity | Description | Guide O.D. | Installed Seal O.D. | Use Cutter No. |
|----------|----------|--------------------|------------|---------------------|----------------|
| 24041-8 | 8 pcs. | .274" / 7mm valves | .431" | .566" | 41410 |
| 24040-8 | 8 pcs. | 5/16" / 8mm valves | .420" | .566" | 41510 |
| 24042-8 | 8 pcs. | 5/16" / 8mm valves | .500" | .608" | 41610 |
| 24047-8 | 8 pcs. | 5/16" / 8mm valves | .530" | .677" | 41710 |
| 24043-8 | 8 pcs. | 11/32" valves | .500" | .620" | 41611 |
| 24045-8 | 8 pcs. | 11/32" valves | .530" | .674" | 41711 |
| 24044-8 | 8 pcs. | 3/8" valves | .500" | .623" | 41612 |
| 24046-8 | 8 pcs. | 3/8" valves | .530" | .677" | 41712 |



ALL TEFLON VALVE STEM SEALS

- ✓ Spring loaded wiper to remove excess oil

| Part No. | Quantity | Description | Guide O.D. | Use Cutter No |
|----------|----------|---------------|------------|---------------|
| 24029-16 | 16 pcs. | 5/16" valves | .500" | 41610 |
| 24034-16 | 16 pcs. | 5/16" valves | .530" | 41710 |
| 24037-16 | 16 pcs. | 11/32" valves | .500" | 41611 |
| 24035-16 | 16 pcs. | 11/32" valves | .530" | 41711 |
| 24039-16 | 16 pcs. | 3/8" valves | .500" | 41612 |
| 24036-16 | 16 pcs. | 3/8" valves | .530" | 41712 |



VALVE GUIDE SEAL CUTTERS

- ✓ Carbide tipped cutters
- ✓ Due to the severe use to which these cutters are subjected, we are not able to warranty damaged goods

| Part No. | Quantity | Pilot Size | Seal No. | Guide O.D. |
|----------|----------|--------------------|---------------|------------|
| 41410 | 1 | .274" / 7mm | 24041 | .431" |
| 41510 | 1 | 5/16" / 8mm valves | 24040 | .420" |
| 41610 | 1 | 5/16" / 8mm valves | 24029 / 24042 | .500" |
| 41710 | 1 | 5/16" / 8mm valves | 24034 / 24047 | .530" |
| 41611 | 1 | 11/32" | 24037 / 24043 | .500" |
| 41711 | 1 | 11/32" | 24035 / 24045 | .530" |
| 41612 | 1 | 3/8" | 24039 / 24044 | .500" |
| 41712 | 1 | 3/8" | 24036 / 24046 | .530" |



VALVE GUIDE SEAL CUTTER PILOT

- ✓ For use with any spring seat or seal cutter

| Part No. | Quantity | Description |
|----------|----------|---------------------|
| 41274 | 1 | 7 mm cutter pilot |
| 41516 | 1 | 5/16" cutter pilot |
| 41132 | 1 | 11/32" cutter pilot |
| 41138 | 1 | 3/8" cutter pilot |



BRONZE VALVE GUIDES

- ✓ .502" O.D.
- ✓ 1.625" length under flange
- ✓ Threaded seal area above flange

| Part No. | Quantity | Description |
|----------|----------|----------------------------------|
| 12081-8 | 8 pcs. | Bronze insert guide - .274" I.D. |
| 12084-8 | 8 pcs. | Bronze insert guide - .311" I.D. |



BRONZE VALVE GUIDE SLEEVES

- ✓ Repair worn guides quickly and easily

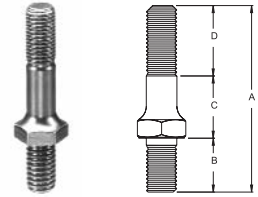
| Part No. | Quantity | Description |
|----------|----------|--|
| 42157-32 | 32 pcs. | Repairs 5/16" valve guides. For 11/32" bore size (.3410" - .3425"). |
| 42158-32 | 32 pcs. | Repairs 11/32" valve guides. For 3/8" bore size (.3720" - .3735"). |
| 42159-32 | 32 pcs. | Repairs 3/8" valve guides. For .4040" - .4055" bore size. |
| 42161-16 | 16 pcs. | .018" wall to convert 11/32" guides to accept 5/16" valves. For .3440" bored hole maximum I.D. |
| 42162-16 | 16 pcs. | .030" wall to convert 3/8" guides to accept 5/16" valves. For .3735" bored hole maximum I.D. |



ROCKER ARMS & STUDS

PROFESSIONAL ROCKER ARM SCREW-IN STUDS

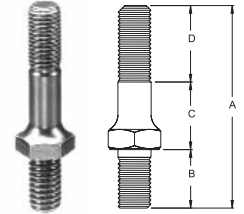
- ✓ 8740 material with 190,000 psi tensile strength
- ✓ Rolled threads
- ✓ Large radii
- ✓ Flat poly lock surface



| Part No. | Quantity | Application | Roller Rockers | Stud Girdles | Upper Threads | Dimensions | | | |
|----------|----------|---|----------------|--------------|---------------|------------|--------|--------|--------|
| | | | | | | A | B | C | D |
| 42276-16 | 16 pcs. | SB Chevy & Ford | Yes | No | 3/8" | 2.425" | .670" | .945" | .810" |
| 42277-16 | 16 pcs. | SB Chevy & Ford | Yes | No | 7/16" | 2.440" | .660" | .890" | .890" |
| 42287-16 | 16 pcs. | SB Chevy w/ 18° head | Yes | Yes | 7/16" | 2.850" | .750" | 1.300" | .800" |
| 42288-16 | 16 pcs. | SB & BB Chevy | Yes | Yes | 7/16" | 2.810" | .740" | 1.020" | 1.050" |
| 42290-8 | 8 pcs. | SB & BB Chevy | Yes | Yes | 7/16" | 2.810" | .740" | 1.020" | 1.050" |
| 42287-16 | 16 pcs. | BB Chevy | Yes | Yes | 7/16" | 2.850" | .750" | 1.300" | .800" |
| 42278-16 | 16 pcs. | BB Chevy | No | No | 7/16" | 2.580" | .820" | .900" | .860" |
| 42255-8 | 8 pcs. | BB Chevy w/ alum. head, exhaust stud only | Yes | Yes | 7/16" | 3.700" | 1.700" | 1.000" | 1.000" |
| 42256-16 | 16 pcs. | BB Chevy w/ tall springs | Yes | Yes | 7/16" | 3.200" | .850" | 1.550" | .800" |
| 42266-16 | 16 pcs. | BB Chevy Mark V w/ 3/8" lower threads converting to Mark IV heads | Yes | No | 7/16" | 2.600" | .775" | .885" | 1.000" |
| 42293-8 | 8 pcs. | BB Chevy w/ Dart aluminum | Yes | Yes | 7/16" | 3.300" | 1.300" | 1.000" | 1.000" |

STREET MASTER ROCKER ARM SCREW-IN STUDS

- ✓ Special maxalloy steel
- ✓ Rolled threads



| Part No. | Quantity | Description | Upper Threads | Dimensions | | | |
|----------|----------|---------------------------------|---------------|------------|-------|-------|--------|
| | | | | A | B | C | D |
| 42106-16 | 16 pcs. | SB Chevy & Ford | 3/8" | 2.560" | .690" | .840" | 1.030" |
| 42147-16 | 16 pcs. | SB Chevy & Ford with poly locks | 3/8" | 2.420" | .690" | .920" | .810" |
| 42103-16 | 16 pcs. | SB Chevy, BB Chevy & Ford | 7/16" | 2.550" | .790" | .890" | .870" |

PROFESSIONAL ROCKER ARM ADJUSTING NUTS

- ✓ Special chrome moly hex material
- ✓ Heat treated and black oxide
- ✓ Set screws and allen wrench included



| Part No. | Quantity | Description |
|----------|----------|---|
| 42107-16 | 16 pcs. | All 3/8" stud Chevys, Fords, Pontiacs |
| 42112-16 | 16 pcs. | All 7/16" stud Chevys and Fords (.580" Body Diameter) |

SMALL BLOCK CHEVROLET STAMPED STEEL ROCKER ARM KITS

- ✓ Highest quality steel
- ✓ Heat treated
- ✓ Long slots to avoid stud interference
- ✓ Kits include oil grooved rocker balls and nuts



These rockers are the non "self-aligning" type used from 1955 to 1989.

ROCKER ARM KIT COMPONENTS

NOTE: Individual rockers only are sold as -8, and rocker balls and rocker nuts are sold as -16. Kits include only 8 pieces of each part.

| Part No. | Quantity | Description | Stud Diameter |
|----------|------------------|-----------------------------------|---------------|
| 43140 | 1 set for 1 head | Small Block - Long Slot 1.5 Ratio | 3/8" |
| 43150 | 1 set for 1 head | Small Block - Long Slot 1.6 Ratio | 3/8" |

| Kit | Rocker | Ball | Nut |
|-------|---------|----------|----------|
| 43140 | 43141-8 | 43142-16 | 43143-16 |
| 43150 | 43151-8 | 43142-16 | 43143-16 |

STEEL GUIDE PLATES

STEEL GUIDE PLATES

- ✓ Meticulously crafted stamping
- ✓ Heat treated and black oxide finished



CYL HEAD COMPONENTS

SMALL BLOCK CHEVROLET RAISED GUIDE PLATE

| Part No. | Quantity | Description | Slots | Pushrods |
|----------|----------|-------------------|-----------|----------|
| 42151-8 | 8 pcs. | Small Block Chevy | On-Center | 5/16" |
| 42150-8 | 8 pcs. | Small Block Chevy | On-Center | 3/8" |



SMALL BLOCK CHEVROLET FLAT GUIDE PLATE

| Part No. | Quantity | Description | Slots | Pushrods |
|----------|----------|-------------------|-----------|----------|
| 42355-8 | 8 pcs. | Small Block Chevy | On-Center | 5/16" |
| 42356-8 | 8 pcs. | Small Block Chevy | On-Center | 3/8" |



BIG BLOCK CHEVROLET

| Part No. | Quantity | Description | Pushrods |
|----------|----------|-----------------|----------|
| 42164-8 | 8 pcs. | Big Block Chevy | 3/8" |
| 42149-8 | 8 pcs. | Big Block Chevy | 7/16" |



FORD 289 - 302 - 351 W PRE 1977 HEADS

| Part No. | Quantity | Description | Pushrods |
|----------|----------|------------------------|----------|
| 42152-8 | 8 pcs. | 289, 302 W, 351 W Ford | 5/16" |



FORD 302 BOSS - 351 C (WITH MODIFIED HEADS)

| Part No. | Quantity | Description | Pushrods |
|----------|----------|--------------------------|----------|
| 42163-8 | 8 pcs. | 302 Boss, 351 C Modified | 5/16" |
| 42156-8 | 8 pcs. | 302 Boss, 351 C Modified | 3/8" |



To convert Ford 351C engines to adjustable rocker arms and pushrod guide plates, machine the old rocker stanchions down to a height of .550" as measured from the adjacent head bolt spot face with cutter 41860. Drill and tap the old screw hole to accept stud 42277.

FORD 429 - 460

| Part No. | Quantity | Description | Pushrods |
|----------|----------|---------------|----------|
| 42166-8 | 8 pcs. | 429, 460 Ford | 5/16" |
| 42160-8 | 8 pcs. | 429, 460 Ford | 3/8" |



SUPERIOR HEAD BOLTS

- ✓ 180,000 psi tensile strength
- ✓ Longer than stock for use with washers
- ✓ Improved wrenchability with 1/2" hex head

| Part No. | Quantity | Description |
|--------------|------------------|---|
| 42193 | 1 set for 1 head | Chevrolet V-6 |
| 42171 | 1 set for 1 head | SB Chevy V-8 |
| 42312 | 1 set for 1 head | SB Chevy, Brodix - 12 and Pontiac 10093328 castings |
| 42313 | 1 set for 1 head | SB Chevy, Brodix aluminum and Pontiac 10033867 |
| 42170 | 1 set for 1 head | BB Chevy |
| 42180 | 1 set for 1 head | BB Chevy with Dart Pro 1 heads |
| 42192 | 1 set for 1 head | BB Chevy with Brodix heads, Merlin II Aluminum |
| 42322 | 1 set for 1 head | BB Chevy with Chevy Bow Tie, Dart Aluminum and Merlin heads |
| 42178 | 1 set for 1 head | Chrysler 383-440 |
| 42198 | 1 set for 1 head | Indy Cylinder Head 440-1 BB Chrysler head |



CYL HEAD COMPONENTS

HARDENED HEAD BOLT WASHERS

- ✓ Special heat treatment to prevent galling

| Part No. | Quantity | Description |
|--------------|----------|--|
| 42102 | 34 pcs. | All Chevys, 289-351 Fords, .760" O.D., 7/16" I.D., .125" thick |
| 42127 | 20 pcs. | All Chryslers, Pontiacs, 390-427 Fords, .875" O.D., 1/2" I.D., .105" thick |
| 42136 | 34 pcs. | Ideal washers for aluminum heads. 7/16" I.D. but larger .935" O.D. for better fit in aftermarket aluminum heads, .125" thick |



CYLINDER HEAD STUD KITS

- ✓ Chrome moly steel
- ✓ Kit includes studs, washers and nuts
- ✓ 200,000 psi tensile strength



| Part No. | Quantity | Description |
|--------------|--------------------|--|
| 42190 | 1 set for 1 engine | SB Chevy OEM cast iron and aluminum Brodix -8, -10, -11, Track 1, Dart Sportsman and Dart II |
| 42283 | 1 set for 1 engine | BB Chevy with Dart and Chevy Bow Tie heads flat milled |
| 42284 | 1 set for 1 engine | BB Chevy with Brodix heads flat milled |
| 42191 | 1 set for 1 engine | BB Chevy with non Bow Tie heads flat milled |
| 42197 | 1 set for 1 engine | Ford 4.6L 2 valve and 4 valve heads |
| 42032 | 1 set for 1 engine | Mitsubishi 2.0L 4G63 / 4G63T (1994 & up) with 12 point nuts |
| 42033 | 1 set for 1 engine | Mitsubishi EVO X 4BIT (2008 & up) with 12 point nuts |
| 42030 | 1 set for 1 engine | Nissan 2.6L RB26 with 12 point nuts |
| 42031 | 1 set for 1 engine | Subaru WRX EJ Series with 12 point nuts |



MAIN BOLT & STUD KITS

- ✓ Forged 8740 chrome moly
- ✓ Kit includes bolts and hardened washers
- ✓ 200,000 psi tensile strength

| Part No. | Quantity | Description |
|--------------|--------------------|---|
| 42022 | 1 set for 1 engine | Mitsubishi 2.0L 4G63 / 4G63T (2007 & earlier) main studs |
| 42023 | 1 set for 1 engine | Mitsubishi EVO X 4BIT (2008 & up) main studs |
| 42020 | 1 set for 1 engine | Subaru 2.0L, 2.2L, 2.5L SOHC/DOHC EJ Series - Crankcase thru bolt kit |



Note: New part numbers are *ITALICIZED*.

FASTENERS

CYL HEAD COMPONENTS

7/16" CYLINDER HEAD STUD NUTS

| Part No. | Quantity | Description |
|----------|----------|---|
| 42279-4 | 4 pcs. | Hex head stud nut for all Chevrolets and 4.6L Fords |
| 42289-4 | 4 pcs. | 12 point stud nut for all Chevrolets and 4.6L Fords |



HEX HEAD INTAKE MANIFOLD BOLTS

- ✓ P/N 42175 and 42176 have gold irridite finished bolts and hardened washers
- ✓ P/N 42177 has black oxide finished bolts and hardened washers



| Part No. | Quantity | Description | Underhead Length |
|----------|----------|---|------------------|
| 42176 | 1 set | Small Block Chevrolet | 1.125" |
| 42177 | 1 set | Small Block Chevrolet using thin casting hi-rise manifolds | 1.000" |
| 42175 | 1 set | Big Block Chevrolet | 1.125" |
| 42294-16 | 16 pcs. | Hardened washers for 42175 & 42176 bolts. .100" thick. Gold Iridite | |
| 42299-16 | 16 pcs. | Hardened washers for 42177 bolts. .125" thick. Black oxide | |

12 POINT HEAD INTAKE MANIFOLD BOLTS

- ✓ Bolts and washers gold irridite finish
- ✓ Shipped with hardened washers



| Part No. | Quantity | Description | Underhead Length |
|----------|----------|---|------------------|
| 42292 | 1 set | Small Block Chevrolet, Chrysler "A" and "B" engines | 1.125" |
| 42291 | 1 set | Big Block Chevrolet using thin casting hi-rise manifolds | 1.125" |
| 42294-16 | 16 pcs. | Hardened washers for above bolts. .100" thick. Gold Iridite | |

HARD TO FIND "AN" WASHERS

- ✓ .060" thick

| Part No. | Quantity | I.D. | O.D. |
|----------|----------|-------|-------|
| 42194 | 12 pcs. | 5/16" | 9/16" |
| 42195 | 12 pcs. | 3/8" | 5/8" |
| 42196 | 12 pcs. | 7/16" | 3/4" |



STUD KITS, BOLTS & GEARS

FRONT TIMING COVER BOLTS

- ✓ Special flange for greater "wrenchability"
- ✓ Integral lock washer

| Part No. | Quantity | Description |
|----------|----------|--|
| 42174 | 1 set | Small and Big Block Chevys-black oxide |
| 42179 | 1 set | Small and Big Block Chevys-gold irridite |



FRONT TIMING COVER STUD KITS

- ✓ Nut starter radius to prevent cross-threading
- ✓ Flanged, serrated, self-locking nuts included

| Part No. | Quantity | Description |
|----------|----------|----------------------------|
| 42134 | 1 set | Small and Big Block Chevys |



OIL PAN BOLTS

- ✓ Special flange for greater "wrenchability"
- ✓ Integral lock washer

| Part No. | Quantity | Description |
|----------|----------|---------------------------------------|
| 42173 | 1 set | Small Block Chevrolet - black oxide |
| 42189 | 1 set | Small Block Chevrolet - gold irridite |
| 42172 | 1 set | Big Block Chevrolet - black oxide |
| 42188 | 1 set | Big Block Chevrolet - gold irridite |



OIL PAN STUD KITS

- ✓ Nut starter radius to prevent cross-threading
- ✓ Flanged, serrated, self-locking nuts included

| Part No. | Quantity | Description |
|----------|----------|-----------------------|
| 42148 | 1 set | Small Block Chevrolet |
| 42155 | 1 set | Big Block Chevrolet |



BALANCER BOLTS

- ✓ Parallel ground washer included
- ✓ Rolled threads

| Part No. | Quantity | Description |
|----------|----------|---|
| 42223 | 1 | SB Chevy 2.470" length. Use 13/16" 12-point socket. |
| 42224 | 1 | BB Chevy 1.560" length. Use 13/16" 12-point socket. |



12 Point

BRONZE DISTRIBUTOR GEARS

- ✓ Precision aluminum / silicon bronze
- ✓ Required with 8620 billet roller camshafts

| Part No. | Quantity | Description |
|----------|----------|--|
| 42240 | 1 | SB and BB Chevrolet - for .490" diameter shaft |
| 42246 | 1 | SB and BB Chevrolet - for .500" diameter aftermarket shaft |



VALVE SPRINGS

NEXTEK[®] SERIES VALVE SPRINGS

... BETTER BY DESIGN

CYL HEAD COMPONENTS

Manley Performance introduced the NexTek[®] (Next Technology) line of valve springs over a decade ago to satisfy the needs of top level engine builders demanding the absolute highest quality valve springs. What started out as only a very small handful of part numbers, specifically designed for the roller cam "BGN" market and high-end Drag Racing arena (Pro Stock/Comp), has evolved into an expansive array of successful part numbers for a wide variety of drag, oval, marine and street/strip applications.

Today, Manley Nextek[®] springs can be found in drag race applications ranging from Bracket to Top Fuel, in oval track engines across the country such as DLM and Sprint cars, as well as in late model Chevy LS, Chrysler 5.7L/6.1L Hemi and Ford Modular vehicles on the street and strip.

Camshaft designers have not stood still and are constantly pushing the envelope with more aggressive lobes. Engine speeds continue to increase in many applications. These factors motivate our valve spring designers to engineer product solutions.



New for 2012, we are proud to introduce the following addition:

✓ P/N **221454-16** - An extension of our dual drag race lineup. See page 66.

Complete specifications are listed under the appropriate headings on the pages that follow.

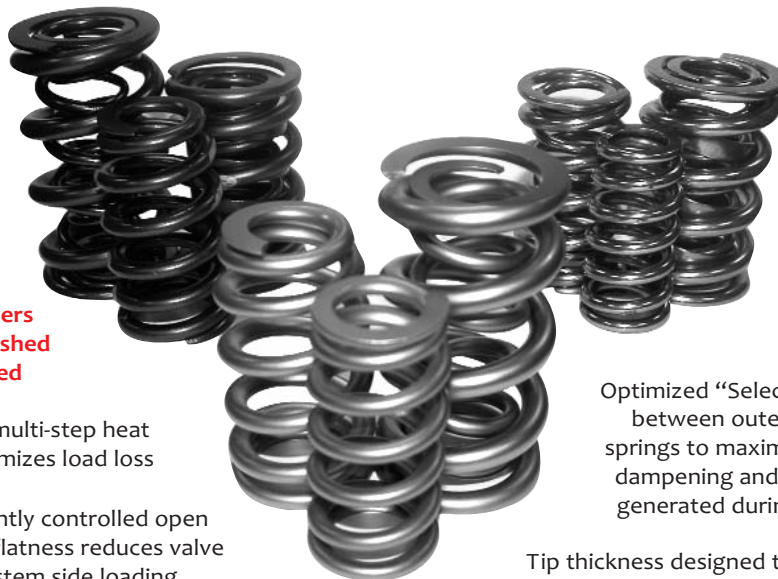
Manufactured from "super clean" Hi-Tensile Chrome Silicon steel

Shot-peened to MIL Specs for maximum fatigue life

Many part numbers available fully polished or Super Finished

Proprietary multi-step heat treating minimizes load loss

Tightly controlled open end flatness reduces valve stem side loading



Many offerings are a damperless design which eliminates unnecessary damper weight and reduces retainer wear

Computer-aided modeling of designs minimizes valve bounce and valve gear separation

Optimized "Select Size Fitting" between outer and inner springs to maximize harmonic dampening and reduce heat generated during operation

Tip thickness designed to eliminate overload breakage

LIGHTWEIGHT DUAL DRAG RACE VALVE SPRINGS

- ✓ **Higher natural frequency and lower active mass** provides improved valvetrain control and higher RPM potential
- ✓ **Dual spring design reduces friction**, which generates less heat and translates into **greatly reduced load loss**
- ✓ **Extensively tested** on the Spiratron, dyno and race track (including blown nitro engines) and proven highly effective
- ✓ **Smaller diameter, lightweight dual design** allows engine to rev higher with **improved valve train control**
- ✓ **Accepts smaller, lighter retainers** which also **promotes higher revs**
- ✓ **Ultra clean, high tensile strength** material
- ✓ **Super Finished** multi-step surface enhancement significantly **improves fatigue strength**
- ✓ **Ideal loads for multiple applications** with minimal load loss



CYL HEAD COMPONENTS

| Part No. | Description | Maximum Valve Lift | O.D. | I.D. | Installed / Open Pressure | Rate (lbs. / in.) | Coil Bind | Weight (grams) | Component Code |
|-----------|---|--------------------|-------|------|-----------------------------|-------------------|-----------|----------------|----------------|
| 221455-16 | Competition Eliminator Alcohol & Fuel Classes | 1.000 | 1.500 | .719 | 438 @ 2.175 1235 @ 1.175 | 797 | 1.130 | 143 | A |
| 221457-16 | Super Stock Competition Eliminator | .950 | 1.500 | .719 | 395 @ 2.150 1155 @ 1.200 | 800 | 1.130 | 150 | A |
| 221456-16 | Super Stock Competition Eliminator | .900 | 1.500 | .719 | 316 @ 2.100 1036 @ 1.200 | 800 | 1.130 | 139 | A |
| 221460-16 | Alcohol & Fuel Classes, Pro Mod | .950 | 1.522 | .719 | 400 @ 2.250 1300 @ 1.300 | 948 | 1.255 | 154 | A |
| 221463-16 | Pro Mod | 1.250 | 1.585 | .785 | 445 @ 2.450 1300 @ 1.200 | 685 | 1.140 | 156 | B |

| Component Code | Titanium Retainers | | TensileMax Retainers | | I.D. Spring Locators | Cup O.D. | Cup I.D. | Seat Cutter | | | |
|----------------|---------------------------------------|---------------------------------------|----------------------|---------------|----------------------|----------|----------|-------------|----------------------------|----------|-------|
| A | 23675-16 | 7° (+.100" for 7° LocCap) | 23675TM-16 | 7° (+.100") | 42347-16 | 1.535 | .570 | 41836 | | | |
| | 23677-16 | | | | | | | | 7° (+.100" for 7° LocCap) | 42318-16 | 1.610 |
| | 23684-16 | 10° Std. Installed | | 42335-16 | | | | | 1.535 | .635 | 41835 |
| | 23676-16 | 10° (+.100") | | 42120-16 | | | | | 1.610 | .635 | 41855 |
| | 23679-16 | 10° (+.100") Lightweight TI-17 Alloy | | | | | | | | | |
| 23683-16 | 10° (+.170") Lightweight TI-17 Alloy | | | | | | | | | | |
| B | 23686-16 | 10° (+.100") Lightweight TI-17 Alloy | 23686TM-16 | 10° (+.100") | 42459-16* | 1.610 | .635 | 41855 | | | |

* Pro Series Locators

VALVE SPRINGS

NEXTEK® SERIES DRAG RACE VALVE SPRINGS

- ✓ Unequaled performance
- ✓ All springs are triple except 221424, 221425 & 221454 double w/o damper
- ✓ Better valve train stability and component life
- ✓ Ideally suited for Fuel and Alcohol classes, Pro Stock, Competition, Super Stock, Super Gas and Mountain Motor applications



All Manley NexTek® valve springs listed below are available in Polished versions to reduce friction, improve fatigue life and minimize load loss. For example 221449P-16.

| Part No. | Polished Part No. | Description | Maximum Valve Lift | O.D. | I.D. | Installed / Open Pressure | Rate (lbs. / in.) | Coil Bind | Weight (grams) | Component Code |
|------------|-------------------|---|--------------------|-------|------|-----------------------------|-------------------|-----------|----------------|----------------|
| 221424-16 | 221424P-16 | Super Gas, Super Comp., Big Block Bracket | .880 | 1.640 | .860 | 250 @ 2.000 800 @ 1.150 | 647 | 1.070 | 149 | A |
| 221454-16 | 221454P-16 | Super Gas, Super Comp., Big Block Bracket | .850 | 1.650 | .855 | 288 @ 2.000 825 @ 1.150 | 635 | 1.105 | 155 | A |
| 221425-16 | 221425P-16 | Super Gas, Super Comp., Big Block Bracket | .900 | 1.640 | .860 | 280 @ 2.100 794 @ 1.250 | 604 | 1.150 | 160 | A |
| 221447-16* | 221447P-16* | Super Stock, Pro Mod., Competition Eliminator | .800 | 1.677 | .635 | 350 @ 2.000 895 @ 1.270 | 746 | 1.160 | 195 | B |
| 221448-16* | 221448P-16* | Super Stock, Pro Mod., Competition Eliminator | .900 | 1.677 | .635 | 350 @ 2.100 1010 @ 1.200 | 733 | 1.142 | 196 | B |
| 221449-16* | 221449P-16* | Pro Stock, Fuel & Alcohol | 1.000 | 1.677 | .632 | 350 @ 2.200 1070 @ 1.200 | 720 | 1.142 | 195 | B |
| 221450-16* | 221450P-16* | Pro Stock, Fuel & Alcohol | 1.000 | 1.677 | .632 | 370 @ 2.200 1140 @ 1.200 | 770 | 1.142 | 193 | B |

* Advertised pressures are achieved after springs have been pressed solid three times.

| Component Code | 10° Titanium Retainers | Type | Installed Height | Spring Cups & Locators | Type | Cup O.D. | Cup I.D. | Seat Cutter | |
|----------------|------------------------|-------------------------------|------------------|------------------------|--|----------|----------|-------------|-------|
| A | 23649-16 | Standard | Std. | 42121-16 | OD | 1.740 | .635 | 41851 | |
| | 23640-16 | Standard | +100 | 42128-16* | OD | 1.740 | .635 | 41851 | |
| | 23540-16 | Lightweight | +100 | 42379-16* | OD | 1.740 | .570 | 41859 | |
| | | | | | * 42128 & 42379 have a wall height of .250 instead of .150 | | | | |
| | | | | | 42337-16 | ID | 1.570 | .570 | 41857 |
| | | | | | 42437-16* | ID | 1.570 | .567 | 41857 |
| | | | | * Pro Series Locators | | | | | |
| B | 23663-16 | Standard | Std. | 42371-16 | OD | 1.740 | .635 | 41851 | |
| | 23653-16 | Standard | +100 | | | | | | |
| | 23553-16 | Lightweight | +100 | 42372-16 | OD | 1.740 | .570 | 41859 | |
| | 23553 I-16 | Lightweight & Impinged | +100 | 42364-16 | ID | 1.660 | .570 | 41858 | |
| | 23673-16 | 7° Valve Locks Required | +100 | | | | | | |
| | 23753-16 | Lightweight & TI-17 Material | +100 | | | | | | |
| | 23708L-16 | Super 7° Valve Locks Required | +100 | | | | | | |

VALVE SPRING & TITANIUM RETAINER KITS

- ✓ Large savings over purchasing items separately

| Kit No. | Quantity | Application | NexTek® Spring No. | 10° Titanium Retainer No. |
|---------|----------|---|--------------------|---------------------------|
| 261424 | 1 kit | Super Gas, Super Comp., Big Block Bracket Engines | 221424-16 | 23640-16 |
| 261424L | 1 kit | Same, except lightweight titanium retainers | 221424-16 | 23540-16 |
| 261454 | 1 kit | Super Gas, Super Comp., Big Block Bracket Engines | 221454-16 | 23640-16 |
| 261454L | 1 kit | Same, except lightweight titanium retainers | 221454-16 | 23540-16 |
| 261425 | 1 kit | Super Gas, Super Comp., Big Block Bracket Engines | 221425-16 | 23640-16 |
| 261425L | 1 kit | Same, except lightweight titanium retainers | 221425-16 | 23540-16 |

Note: New part numbers are **ITALICIZED**.

VALVE SPRINGS

NEXTEK® SERIES

OVAL TRACK & ENDURANCE VALVE SPRINGS



- ✓ No degradation of spring pressure in the later stages of a race
- ✓ Specially processed premium-grade chrome silicon that is virtually free of impurities or surface irregularities
- ✓ Nextek® Series valve springs have been tested by leading engine builders and are confirmed to be the best performing valve springs on the market today

| Part No. | Polished Part No. | Super Finished Part No. | Description | Maximum Valve Lift | O.D. | I.D. | Installed / Open Pressure | Rate (lbs. / in.) | Coil Bind | Weight (grams) | Component Code |
|-----------|-------------------|-------------------------|---------------------------------|--------------------|-------|------|----------------------------|-------------------|-----------|----------------|----------------|
| 221432-16 | ----- | ----- | Late Model Stock w/ Flat Tappet | .630 double | 1.530 | .750 | 150 @ 1.900 423 @ 1.270 | 435 | 1.170 | 152 | A |
| ----- | 221440P-16 | ----- | Circle Track Roller | .700 double | 1.570 | .760 | 255 @ 2.000 629 @ 1.300 | 534 | 1.190 | 165 | B |
| ----- | 221441P-16 | ----- | Circle Track Roller | .730 double | 1.570 | .750 | 280 @ 2.030 700 @ 1.300 | 575 | 1.215 | 170 | C |
| ----- | 221442-16 | ----- | Circle Track Roller | .750 double | 1.560 | .812 | 260 @ 2.000 660 @ 1.250 | 533 | 1.200 | 155 | D |
| 221443-16 | 221443P-16 | ----- | Circle Track Roller | .730 double | 1.580 | .832 | 235 @ 1.950 610 @ 1.250 | 535 | 1.170 | 150 | E |
| 221444-16 | 221444P-16 | ----- | Circle Track Roller | .750 double | 1.610 | .842 | 235 @ 2.050 645 @ 1.300 | 546 | 1.220 | 161 | F |
| ----- | 221445P-16 | ----- | Circle Track Roller | .800 double | 1.620 | .852 | 280 @ 2.050 680 @ 1.250 | 500 | 1.200 | 168 | G |
| ----- | ----- | 221446SF-16 | Circle Track Roller | .800 double | 1.400 | .700 | 240 @ 2.050 700 @ 1.250 | 575 | 1.150 | 125 | H |

ANCILLARY COMPONENTS

| Component Code | Super 7° Retainers | Super 7° Lightweight | Super 7° +.050 | TensileMax Super 7° | H-13 Tool Steel | Spring Cups & Locators | Type | Cup O.D. | Cup I.D. | Cup Thickness | Seat Cutter |
|----------------|--|--|------------------------------|--|---|--|------|----------|----------|---------------|-------------|
| A | 23707-16 23672 ICD-16 23707 SCD-16 23644-16 23650-16 | (10° Ti Std.) (10° Ti +.100) | | 23707TM-16 | | 42330-16 42326-16 42426-16* 42466-16* | ID | 1.535 | .635 | .062 | 41835 |
| B | 23705 ICD-16 23644-16 23650-16 | 23705 L-16 23705 LI-16 (10° Ti Std.) (10° Ti +.100) | 23706 L-16 23706 LI-16 | 23705TM-16 23705LTM-16 (Lightweight) | | 42331-16 | ID | 1.530 | .570 | .062 | 41856 |
| C | 23672-16 23672 I-16 23672 ICD-16 23647-16 | 23672 L-16 (10° Ti +.100) | | 23672TM-16 | 23647TS-16 (10° +.100) 23672TS-16 (Super 7°) | 42330-16 42326-16 42426-16* 42466-16* | ID | 1.535 | .635 | .062 | 41835 |
| D | 23682-16 23682 I-16 23682 ICD-16 23643-16 | 23682 L-16 23682 LI-16 (10° Ti +.100) | | 23682TM-16 | 23643TS-16 (10° +.100) 23682TS-16 (Super 7°) | 42343-16 42443-16* | ID | 1.550 | .570 | .062 | 41856 |
| E | 23681-16 23681 I-16 23681 ICD-16 23648-16 | 23681 L-16 23681 LI-16 (10° Ti +.100) | 23691-16 23691 ICD-16 | | 23648TS-16 (10° +.100) 23681TS-16 (Super 7°) | 42370-16 42369-16 42373-16 42573-16* 42438-16* | OD | 1.687 | .570 | .062 | 41858 |
| F | 23681-16 23681 I-16 23681 ICD-16 23648-16 | 23681 L-16 23681 LI-16 (10° Ti +.100) | 23691-16 23691 ICD-16 | | 23648TS-16 (10° +.100) 23681TS-16 (Super 7°) | 42365-16 42367-16 42368-16 | OD | 1.740 | .570 | .062 | 41859 |
| G | 23685-16 23685 I-16 | 23685 L-16 23685 LI-16 | | 23685TM-16 23685DCTM-16 | | 42342-16 | ID | 1.610 | .570 | .062 | 41857 |
| H | | 23746 L-16 | | 23746TM-16 | 23746TS-16 (Super 7°) 23747TS-16 (10° +.100) | 42446-16* | ID | 1.410 | .567 | .062 | 41850 |

SUFFIX CODE: I : Impinged ICD : Impinged, Convoluted and Drilled SCD : Steel, Convoluted and Drilled L : Lightweight LI : Lightweight and Impinged
* Pro Series Locators

VALVE SPRINGS



NEXTEK® SERIES

HIGH PERFORMANCE STREET/STRIP VALVE SPRINGS
FOR SB CHEVY LS, SB CHRYSLER HEMI & FORD MODULAR APPLICATIONS.

✓ Specially processed premium-grade chrome silicon that is virtually free of impurities or surface irregularities

CYL HEAD COMPONENTS

| Part No. | Description | Maximum Valve Lift | O.D. | I.D. | Installed / Open Pressure | Rate (lbs. / in.) | Coil Bind | Weight (grams) | Component Code |
|------------|---|--------------------|---------------------------|-------------------------|----------------------------|-------------------|-----------|----------------|----------------|
| 221423-16 | SBC LS-1, LT-1 / LT-4 / L-98 Stock Diameter Street/Strip | .575 | 1.255 | .830 | 115 @ 1.750 350 @ 1.175 | 409 | 1.100 | 73 | A |
| 221428-16 | SBC LS-Series, LT-1 / LT-4 / L-98 High Performance Street/Strip | .600 | 1.076 Top 1.311 Bottom | .650 Top .885 Bottom | 150 @ 1.800 355 @ 1.200 | 341 | 1.085 | 79 | B |
| 221438-16 | SBC LS-Series, LT-1 / LT-4 / L-98 High Performance Street/Strip | .650 | 1.076 Top 1.311 Bottom | .650 Top .885 Bottom | 150 @ 1.800 375 @ 1.150 | 353 | 1.100 | 73 | B |
| 221436-16 | SBC LS-Series, High Performance Street/Strip | .660 | 1.295 | .676 | 155 @ 1.810 405 @ 1.150 | 379 | 1.100 | 93 | C |
| 221435-16 | SBC LS-Series, High Performance Street/Strip | .700 | 1.340 | .726 | 170 @ 1.810 446 @ 1.110 | 394 | 1.050 | 94 | D |
| 221430-16* | Chrysler Hemi 5.7L(Thru 2008), 6.1L Stock Diameter High Performance Street/Strip | .600 | 1.056 Top 1.206 Bottom | .630 Top .780 Bottom | 130 @ 1.811 370 @ 1.211 | 400 | 1.170 | 74 | E |
| 221431-16* | Chrysler Hemi 5.7L, 6.1L High Performance Street/Strip | .650 | 1.076 Top 1.311 Bottom | .650 Top .885 Bottom | 146 @ 1.811 371 @ 1.161 | 353 | 1.100 | 72 | F |
| 221427-16 | Ford 4.6L, 5.4L SOHC 2 Valves per Cylinder Stock Diameter Street/Strip | .580 | 1.020 Top 1.125 Bottom | .642 Top .748 Bottom | 95 @ 1.680 240 @ 1.130 | 264 | 1.080 | 52 | G |
| 221437-16 | Ford 4.6L, 5.4L SOHC 2 Valves per Cylinder Stock Diameter Ideal for Boosted Applications | .580 | 1.030 Top 1.175 Bottom | .642 Top .787 Bottom | 125 @ 1.680 265 @ 1.130 | 255 | 1.080 | 56 | G |
| 221429-24 | Ford 4.6L, 5.4L 3 Valve 3 Valves per Cylinder Stock Diameter Street/Strip | .500 | .880 Top 1.025 Bottom | .565 Top .710 Bottom | 95 @ 1.670 230 @ 1.170 | 270 | 1.100 | 45 | H |
| 221433-24 | Ford 4.6L, 5.4L 3 Valve 3 Valves per Cylinder High Performance Street/Strip | .580 | 1.013 Top 1.101 Bottom | .650 Top .738 Bottom | 110 @ 1.670 260 @ 1.090 | 258 | 1.020 | 49 | I |
| 221434-32 | Ford 4.6L, 5.4L DOHC 4 Valves per Cylinder Stock Diameter High Performance Street/Strip | .525 | 1.016 Top 1.126 Bottom | .640 Top .750 Bottom | 95 @ 1.420 260 @ .920 | 330 | .880 | 45 | J |

* These Chrysler Hemi springs come with shims which are ONLY needed for 6.1L applications on the intake side in order to achieve the correct installed height. P/N 221431 also includes a set of piloting rings that install over the factory "Top Hat" integral valve seal to properly locate the ID of the spring on early 5.7L (thru 2008) and 6.1L applications. P/N 221431X-16 which does not include any shims or piloting rings is also available for the Hemi Drag Pak engines.

Please refer to opposite page 69 for the appropriate fitting retainers and spring cups. Match the component codes listed to find the correct parts.

ANCILLARY COMPONENTS

| Component Code | Retainer Part No. | Description | Spring Cup Part No. | Type | Cup O.D. | Cup I.D. | Cup Thickness | Seat Cutter |
|----------------|-------------------|---|---------------------|-------|----------|----------|---------------|-------------|
| A | 23631-16 | 7° Steel for Manley 13098 or factory LS-1 valve lock and factory spring seat | | | | | | |
| | 23664-16 | 7° Steel +.050 for LT-1 and standard type valve lock | | | | | | |
| | 23632-16 | 7° Titanium for Manley 13098 or factory LS-1 valve lock and factory spring seat | | | | | | |
| | 23633-16 | 7° Titanium +.050 for Manley 13098 or factory LS-1 valve lock and factory spring seat | | | | | | |
| | 23634-16 | 7° Titanium +.050 for LT-1 and standard type valve lock | 42341-16 | ID | 1.170 | .505 | .035 | None |
| B | 23620-16 | 7° Steel for Manley 13098 or factory LS-1 valve lock and factory spring seat | | | | | | |
| | 23622-16 | 7° Titanium for Manley 13098 or factory LS-1 valve lock and factory spring seat | | | | | | |
| | 23625-16 | 7° Titanium +.050 for Manley 13098 or factory LS-1 valve lock and factory spring seat | | | | | | |
| | 23626-16 | 7° Titanium +.050 for LT-1 and standard type valve lock | 42338-16 | ID | 1.290 | .505 | .035 | None |
| | | | 42336-16 | ID | 1.290 | .505 | .062 | None |
| | | | 42349-16 | ID | 1.290 | .570 | .062 | 41850 |
| C | 23621-16 | 7° Steel +.050 for Manley 13098 or factory LS-1 valve lock | | | | | | |
| | 23616TS-16 | 10° H-13 Tool Steel +.050 for Manley 13153 valve lock | | | | | | |
| | 23617-16 | 7° Titanium for Manley 13098 or factory LS-1 valve lock | | | | | | |
| | 23623-16 | 7° Titanium +.050 for Manley 13098 or factory LS-1 valve lock | | | | | | |
| | 23624-16 | 7° Titanium +.050 for LT-1 and standard type valve lock | 42334-16 | ID | 1.270 | .505 | .035 | None |
| | | 42124-16 | ID | 1.270 | .570 | .062 | 41850 | |
| D | 23610-16 | 7° Steel +.050 for Manley 13098 or factory LS-1 valve lock | | | | | | |
| | 23611-16 | 7° Titanium +.050 for Manley 13098 or factory LS-1 valve lock | | | | | | |
| | | | 42348-16 | ID | 1.320 | .505 | .035 | None |
| | | | 42135-16 | ID | 1.320 | .567 | .035 | None |
| E | 23629-16 | 7° Titanium for Manley 13093 or factory valve lock | | | | | | |
| F | 23612-16 | 7° Steel for Manley 13093 or factory valve lock | | | | | | |
| | 23613-16 | 7° Titanium for Manley 13093 or factory valve lock | | | | | | |
| | | Must use ID locator P/N 42324-16 for the 2009 and up Hemi 5.7L. | 42324-16 | ID | 1.300 | .812 | .205 | None |
| G | 23627-16 | 7° Titanium for Manley 13089 or factory valve lock | | | | | | |
| | 23667-16 | 7° Titanium + .060 for Manley 13089 or factory valve lock | | | | | | |
| H | 23628-24 | 7° Titanium for Manley 13088 or factory valve lock | | | | | | |
| I | 23614-24 | 7° Titanium for Manley 13088 or factory valve lock | | | | | | |
| J | 23627-32 | 7° Titanium for Manley 13089 or factory valve lock | | | | | | |
| | 23667-32 | 7° Titanium + .060 for Manley 13089 or factory valve lock | | | | | | |

CYL HEAD COMPONENTS

Simon Birch
Xtreme Ford Tuning
Western Australia

Note: New part numbers are *ITALICIZED*.

VALVE SPRINGS

STREET MASTER VALVE SPRINGS

- ✓ Chrome silicon material
- ✓ Designed for low stress and long service life



CYL HEAD COMPONENTS

| Part No. | Type | Application | Size OD/ID | Pressures | Rate (lbs. / in.) | Weight (grams) | 7° Steel Retainer | 10° Steel Retainer | Titanium Retainer |
|----------|------------------|--------------------------------------|---------------|---|-------------------|----------------|---|--------------------|---|
| 22409-16 | Outer w/ damper | SB Chevy Street Use | 1.250" .865" | 110 @ 1.700" 285 @ 1.210" Coil Bind: 1.180" | 357 | 87 | 23651 (std.) 23652 (+.050") | | 23642 (7° x 11/32" +.050") |
| 22408-16 | Double w/ damper | SB Chevy, LS-1 Chevy, Ford, Chrysler | 1.437" .720" | 115 @ 1.800" 330 @ 1.250" 350 @ 1.200" Coil Bind: 1.100" | 392 | 117 | 23645 (11/32") 23646 (11/32" +.100") 23666 (3/8") | 23635 | 23630 (10 Degree) 23638 (7° x 5/16" LS-1) 23639 (7° x 5/16" +.050" LS-1) |
| 22407-16 | Double w/ damper | SB & BB Chevy | 1.437" .720" | 135 @ 1.800" 365 @ 1.250" 385 @ 1.200" Coil Bind: 1.085" | 418 | 121 | 23645 (11/32") 23646 (11/32" +.100") 23666 (3/8") | 23635 | 23630 (10 Degree) |
| 22406-16 | Outer w/ damper | BB Chevy, Chrysler | 1.550" 1.080" | 125 @ 1.875" 355 @ 1.375" Coil Bind: 1.190" | 460 | 121 | 23645 (11/32") 23646 (11/32" +.100") 23666 (3/8") | 23635 | 23630 (10 Degree) |

PROFESSIONAL VALVE SPRINGS

- ✓ Chrome silicon material for oval track and drag racing



| Part No. | Type | Application | Size OD/ID | Pressures | Coil Bind | Rate (lbs. / in) | Super 7° Retainer | 7°x11/32" Retainer | 10° Steel Retainer | 10° Titanium Retainer |
|----------|------------------|--|--------------|------------------------------|-----------|------------------|---|--|--------------------------------|-----------------------|
| 22410-16 | Outer w/ damper | Oval track Stock Class Chrome Silicon | 1.260" .876" | 130 @ 1.750" 334 @ 1.200" | 1.095" | 370 | | 23651 (Steel) 23652 (+.050" Steel) 23642 (+.050" Titanium) | | |
| 22411-16 | Outer w/ damper | SB Chevy Stock Diameter Chrome Silicon | 1.255" .870" | 115 @ 1.750" 390 @ 1.175" | 1.100" | 470 | | 23651 (Steel) 23652 (+.050" Steel) 23642 (+.050" Titanium) | | |
| 22441-16 | Double w/ damper | Oval Track Chrome Silicon | 1.550" .740" | 170 @ 1.900" 500 @ 1.200" | 1.100" | 471 | 23670 (Titanium) 23670TM (Tensile Max) | 23659 (+.100") 23660TS (+.100" H-13) | 23658 (std.) 23660 (+.100") | |
| 22429-16 | Double w/ damper | Oval Track Chrome Silicon | 1.550" .740" | 150 @ 1.880" 425 @ 1.280" | 1.180" | 458 | 23672 (Titanium) 23672TM (Tensile Max) 23672TS (H-13) | 23656 (+.100") 23647TS (+.100" H-13) | 23657 (std.) 23661 (+.100") | |
| 22430-16 | Double w/ damper | Oval Track Chrome Silicon | 1.550" .735" | 210 @ 1.900" 525 @ 1.250" | 1.200" | 484 | 23672 (Titanium) 23672TM (Tensile Max) 23672TS (H-13) | 23656 (+.100") 23647TS (+.100" H-13) | 23657 (std.) 23661 (+.100") | |
| 22431-16 | Double w/ damper | Oval / Drag Chrome Silicon | 1.550" .725" | 225 @ 1.950" 580 @ 1.250" | 1.190" | 507 | 23670 (Titanium) 23670TM (Tensile Max) | 23659 (+.100") 23660TS (+.100" H-13) | 23658 (std.) 23660 (+.100") | |
| 22440-16 | Double w/ damper | Drag Race Chrome Silicon | 1.550" .720" | 250 @ 1.850" 680 @ 1.150" | 1.090" | 614 | 23670 (Titanium) 23670TM (Tensile Max) | 23659 (+.100") 23660TS (+.100" H-13) | 23658 (std.) 23660 (+.100") | |

VALVE SPRINGS

SPORT COMPACT VALVE SPRINGS

HONDA/ACURA, MITSUBISHI, NISSAN, TOYOTA, SUBARU & DODGE APPLICATIONS

✓ Wound from super clean alloy

✓ Designed to handle aftermarket camshafts

✓ Revs up to 10,000 RPM with Manley titanium retainers



| Part No. | Quantity | Application | O.D. / I.D. Outer Inner | Pressures | Stock / Maximum Net Lift | Coil Bind | Rate (lbs. / in.) | Titanium Retainer |
|----------|----------|--|-------------------------------|--|--------------------------------|--------------|------------------------|----------------------|
| 22105-16 | 16 pcs. | Acura B Series V-Tec High Performance Race | 1.180"/.870" .865"/.660" | 82 @ 1.350" 206 @ .950" 248 @ .815" | .400" .535" | .765" | 310 | 23100-16 |
| 22110-16 | 16 pcs. | Honda H22 V-Tec | 1.160"/.870" .865"/.660" | 88 @ 1.400" 200 @ .950" 232 @ .840" | .450" .560" | .790" | 227 | 23100-16 |
| 22120-16 | 16 pcs. | Honda B Series Non V-Tec <small>Stock installed height on B Series Non V-Tec spring is: Intake - 1.320" / Exhaust - 1.425"</small> | 1.105"/.820" .800"/.630" | 54 @ 1.375" 143 @ .990" 195 @ .760" | .385" .615" | .710" | 230 | 23120-16 |
| 22140-16 | 16 pcs. | Honda K20A/K20Z | 1.160"/.870" .865"/.660" | 80 @ 1.590" 249 @ 1.140" 283 @ 1.050" | .450" .540" | 1.000" | 375 | 23140-16 |
| 22145-16 | 16 pcs. | Honda K20A3/K24A | 1.106"/.787" | 79 @ 1.565" 182 @ 1.185" 226 @ 1.025" | .380" .545" | .975" | 274 | 23145-16 |
| 22150-16 | 16 pcs. | Honda F20C/F22C | 1.160"/.870" .865"/.660" | 84 @ 1.580" 264 @ 1.100" 283 @ 1.050" | .480" .530" | 1.000" | 375 | 23150-16 |
| 22190-16 | 16 pcs. | Dodge SRT-4 | 1.100"/.775" | 92 @ 1.500" 188 @ 1.175" 237 @ 1.000" | .325" .500" | .950" | 294 | 23190-16 |
| 22115-16 | 16 pcs. | Mitsubishi 4G63-4G63T DOHC 16 Valve (1990-1999) DSM | 1.160"/.870" .865"/.660" | 104 @ 1.580" 237 @ 1.210" 269 @ 1.120" | .370" .460" | 1.070" | 359 | 23115-16 |
| 22125-16 | 16 pcs. | Mitsubishi 4G63-4G63T DOHC 16 Valve (1990-2006) DSM / EVO | 1.100"/.775" | 66 @ 1.580" 175 @ 1.210" 237 @ 1.000" | .370" .580" | .950" | 294 | 23125-16 |
| 22195-16 | 16 pcs. | Mitsubishi EVO X 4B11T DOHC 16 Valve (2008-Up) | .990"/.710" | 86 @ 1.400" 180 @ 1.030" 198 @ .970" | .370" .430" | .920" | 253 | 23195-16 |
| 22155-24 | 24 pcs. | Nissan Patrol TB48 | 1.100"/.775" | 75 @ 1.550" 191 @ 1.165" 237 @ 1.100" | .385" .550" | .950" | 294 | 23155-24 |
| 22160-16 | 16 pcs. | Nissan KA24DE | 1.180"/.880" .870"/.670" | 73 @ 1.400" 191 @ 1.050" 228 @ .900" | .350" .500" | .850" | 310 | 23160-16 |
| 22165-16 | 16 pcs. | Nissan SR20DE/SR20DET | 1.160"/.835" | 90 @ 1.550" 185 @ 1.170" 225 @ 1.010" | .380" .540" | .960" | 248 | 23165-16 |
| 22170-24 | 24 pcs. | Nissan VQ35DET | .990"/.710" | 80 @ 1.425" 175 @ 1.050" 195 @ .970" | .375" .455" | .920" | 253 | 23170-24 |
| 22175-24 | 24 pcs. | Nissan RB26DET | 1.100"/.775" | 80 @ 1.535" 197 @ 1.140" 237 @ 1.000" | .395" .535" | .950" | 294 | 23175-24 |
| 22180-16 | 16 pcs. | Subaru WRX/Sti | 1.050"/.755" | 60 @ 1.420" 151 @ 1.050" 187 @ .895" | .370" .525" | .845" | 245 | 23180-16 |
| 22185-16 | 16 pcs. | Subaru WRX/Sti | 1.126"/.640" | 95 @ 1.420" 217 @ 1.050" 257 @ .930" | .370" .490" | .880" | 330 | 23185-16 |
| 22130-24 | 24 pcs. | Toyota Supra 2JZGT/2JZGTE 6 cyl. | 1.050"/.755" | 82 @ 1.325" 165 @ .985" 187 @ .895" | .340" .430" | .845" | 245 | 23130-24 |

CYL HEAD COMPONENTS

VALVE SPRINGS

NEXTEK® SERIES DRAG RACE VALVE SPRINGS LOAD CHART

CYL HEAD COMPONENTS

| P/N | 221424/P | 221425/P | 221447/P | 221448/P | 221449/P | 221450/P | 221454/P | 221455 | 221456 | 221457 | 221460 | 221463 |
|----------------|-------------|------------|------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|
| Type of Spring | Double | Double | Triple | Triple | Triple | Triple | Double | Double | Double | Double | Double | Double |
| Installed Ht. | 2.000 | 2.100 | 2.000 | 2.100 | 2.200 | 2.200 | 2.000 | 2.175 | 2.100 | 2.150 | 2.250 | 2.450 |
| Inst. Pressure | 250 | 280 | 350 | 350 | 350 | 370 | 288 | 438 | 316 | 395 | 400 | 410 |
| Open Ht. | 1.150 | 1.250 | 1.270 | 1.200 | 1.200 | 1.200 | 1.150 | 1.175 | 1.200 | 1.200 | 1.300 | 1.200 |
| Open Pressure | 800 | 794 | 895 | 1010 | 1070 | 1140 | 825 | 1235 | 1036 | 1155 | 1300 | 1340 |
| Spring Rate | 647 | 604 | 746 | 733 | 720 | 770 | 635 | 797 | 800 | 800 | 948 | 745 |
| O.D. of Outer | 1.640 | 1.640 | 1.677 | 1.677 | 1.677 | 1.677 | 1.650 | 1.500 | 1.500 | 1.500 | 1.522 | 1.585 |
| I.D. of Outer | 1.185 | 1.185 | 1.203 | 1.203 | 1.203 | 1.203 | 1.185 | 1.050 | 1.050 | 1.050 | 1.050 | 1.125 |
| I.D. of Middle | N/A | N/A | 0.874 | 0.874 | 0.874 | 0.874 | N/A | N/A | N/A | N/A | N/A | N/A |
| I.D. of Inner | 0.860 | 0.860 | 0.635 | 0.635 | 0.632 | 0.632 | 0.860 | 0.719 | 0.719 | 0.719 | 0.719 | 0.785 |
| Coil Bind Ht. | 1.070 | 1.150 | 1.160 | 1.142 | 1.142 | 1.142 | 1.105 | 1.130 | 1.130 | 1.130 | 1.255 | 1.140 |
| Damper | No | No | No | No | No | No | No | No | No | No | No | No |
| Inches | | | | | | | | | | | | |
| 2.650 | | | | | | | | | | | | 261 |
| 2.600 | | | | | | | | | | | | 298 |
| 2.550 | | | | | | | | | | | | 336 |
| 2.500 | | | | | | | | | | | | 373 |
| 2.450 | | | | | | | | | | | 210 | 410 |
| S 2.400 | | | | | 206 | 216 | | | | | 258 | 447 |
| P 2.350 | | | | | 242 | 255 | | 299 | | 235 | 305 | 485 |
| R 2.300 | | 159 | | 203 | 278 | 293 | | 338 | 156 | 275 | 353 | 522 |
| I 2.250 | | 189 | | 240 | 314 | 332 | | 378 | 196 | 315 | 400 | 559 |
| N 2.200 | 121 | 220 | 201 | 277 | 350 | 370 | 161 | 418 | 236 | 355 | 447 | 596 |
| G 2.150 | 153 | 250 | 238 | 313 | 386 | 409 | 193 | 458 | 276 | 395 | 495 | 634 |
| 2.100 | 185 | 280 | 275 | 350 | 422 | 447 | 225 | 498 | 316 | 435 | 542 | 671 |
| 2.050 | 218 | 310 | 313 | 387 | 458 | 486 | 256 | 538 | 356 | 475 | 590 | 708 |
| 2.000 | 250 | 340 | 350 | 423 | 494 | 524 | 288 | 578 | 396 | 515 | 637 | 745 |
| H 1.950 | 282 | 371 | 387 | 460 | 530 | 563 | 320 | 617 | 436 | 555 | 684 | 783 |
| E 1.900 | 315 | 401 | 425 | 497 | 566 | 601 | 352 | 657 | 476 | 595 | 732 | 820 |
| 1.850 | 347 | 431 | 462 | 533 | 602 | 640 | 383 | 697 | 516 | 635 | 779 | 857 |
| 1.800 | 379 | 461 | 499 | 570 | 638 | 678 | 415 | 737 | 556 | 675 | 827 | 894 |
| I 1.750 | 412 | 491 | 537 | 607 | 674 | 717 | 447 | 777 | 596 | 715 | 874 | 932 |
| G 1.700 | 444 | 522 | 574 | 643 | 710 | 755 | 479 | 817 | 636 | 755 | 921 | 969 |
| H 1.650 | 476 | 552 | 611 | 680 | 746 | 794 | 510 | 857 | 676 | 795 | 969 | 1006 |
| T 1.600 | 509 | 582 | 648 | 717 | 782 | 832 | 542 | 896 | 716 | 835 | 1016 | 1043 |
| 1.550 | 541 | 612 | 686 | 753 | 818 | 871 | 574 | 936 | 756 | 875 | 1064 | 1081 |
| 1.500 | 574 | 642 | 723 | 790 | 854 | 909 | 606 | 976 | 796 | 915 | 1111 | 1118 |
| 1.450 | 606 | 673 | 760 | 826 | 890 | 948 | 637 | 1016 | 836 | 955 | 1158 | 1155 |
| 1.400 | 638 | 703 | 798 | 863 | 926 | 986 | 669 | 1056 | 876 | 995 | 1206 | 1192 |
| 1.350 | 671 | 733 | 835 | 900 | 962 | 1025 | 701 | 1096 | 916 | 1035 | 1253 | 1230 |
| 1.300 | 703 | 763 | 872 | 936 | 998 | 1063 | 733 | 1135 | 956 | 1075 | 1301 | 1267 |
| 1.250 | 735 | 793 | 910 | 973 | 1034 | 1102 | 764 | 1175 | 996 | 1115 | | 1304 |
| 1.200 | 768 | 824 | 947 | 1010 | 1070 | 1140 | 796 | 1215 | 1036 | 1155 | | 1341 |
| 1.150 | 800 | | | | | | 828 | 1255 | 1076 | 1195 | | |
| 1.100 | 832 | | | | | | | | | | | |
| | LOAD (LBS.) | | | | | | | | | | | |

Note: **BOLD** loads correspond to installed and open pressures.

NEXTEK® SERIES

OVAL TRACK & ENDURANCE VALVE SPRINGS

LOAD CHART

| P/N Type of Spring | 221432 Double | 221440P Double | 221441P Double | 221442 Double | 221443/P Double | 221444/P Double | 221445P Double | 221446SF Double |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Installed Ht. Inst. Pressure | 1.900 150 | 2.000 255 | 2.030 280 | 2.000 260 | 1.950 235 | 2.050 235 | 2.050 280 | 2.050 240 |
| Open Ht. Open Pressure | 1.270 423 | 1.300 629 | 1.300 700 | 1.250 660 | 1.250 610 | 1.300 645 | 1.250 680 | 1.250 700 |
| Spring Rate | 435 | 534 | 575 | 533 | 535 | 546 | 500 | 575 |
| O.D. of Outer I.D. of Outer I.D. of Inner | 1.530 1.141 0.750 | 1.570 1.137 0.760 | 1.570 1.121 0.750 | 1.560 1.127 0.812 | 1.580 1.147 0.832 | 1.610 1.161 0.842 | 1.620 1.187 0.852 | 1.400 0.990 0.700 |
| Coil Bind Ht. | 1.170 | 1.190 | 1.215 | 1.200 | 1.170 | 1.220 | 1.200 | 1.150 |
| Damper | Yes | Yes | Yes | No | No | No | No | No |
| S P R I N G H E I G H T | Inches | | | | | | | |
| | 2.250 | | | | | 126 | 180 | 125 |
| | 2.200 | | 148 | 182 | 153 | 153 | 205 | 154 |
| | 2.150 | | 175 | 211 | 180 | 128 | 180 | 230 |
| | 2.100 | 63 | 202 | 240 | 207 | 155 | 208 | 255 |
| | 2.050 | 85 | 228 | 268 | 233 | 182 | 235 | 280 |
| | 2.000 | 107 | 255 | 297 | 260 | 208 | 262 | 305 |
| | 1.950 | 128 | 282 | 326 | 287 | 235 | 290 | 330 |
| | 1.900 | 150 | 308 | 355 | 313 | 262 | 317 | 355 |
| | 1.850 | 172 | 335 | 383 | 340 | 289 | 344 | 380 |
| | 1.800 | 194 | 362 | 412 | 367 | 315 | 372 | 405 |
| | 1.750 | 215 | 389 | 441 | 393 | 342 | 399 | 430 |
| | 1.700 | 237 | 415 | 470 | 420 | 369 | 426 | 455 |
| | 1.650 | 259 | 442 | 498 | 447 | 396 | 453 | 480 |
| | 1.600 | 281 | 469 | 527 | 473 | 422 | 481 | 505 |
| | 1.550 | 302 | 495 | 556 | 500 | 449 | 508 | 530 |
| | 1.500 | 324 | 522 | 585 | 527 | 476 | 535 | 555 |
| 1.450 | 346 | 549 | 613 | 553 | 503 | 563 | 580 | |
| 1.400 | 368 | 575 | 642 | 580 | 529 | 590 | 605 | |
| 1.350 | 389 | 602 | 671 | 606 | 556 | 617 | 630 | |
| 1.300 | 411 | 629 | 700 | 633 | 583 | 645 | 655 | |
| 1.250 | 433 | 656 | 728 | 660 | 610 | 672 | 680 | |
| 1.200 | 455 | | | | 636 | | 729 | |
| | LOAD (LBS.) | | | | | | | |

Note: **BOLD** loads correspond to installed and open pressures.

CYL HEAD COMPONENTS

VALVE SPRINGS

NEXTEK® SERIES

HIGH PERFORMANCE STREET/STRIP VALVE SPRINGS

LOAD CHART

CYL HEAD COMPONENTS

| P/N | 221423 | 221427 | 221428 | 221429 | 221430 | 221431 | 221433 | 221434 | 221435 | 221436 | 221437 | 221438 |
|----------------|--------|---------|---------|---------|---------|---------|---------|---------|--------|--------|---------|---------|
| Type of Spring | Single | Conical | Conical | Conical | Conical | Conical | Conical | Conical | Double | Double | Conical | Conical |
| Installed Ht. | 1.750 | 1.680 | 1.800 | 1.670 | 1.811 | 1.811 | 1.670 | 1.420 | 1.810 | 1.810 | 1.680 | 1.800 |
| Inst. Pressure | 115 | 95 | 150 | 95 | 130 | 146 | 110 | 95 | 170 | 155 | 125 | 150 |
| Open Ht. | 1.175 | 1.130 | 1.200 | 1.170 | 1.211 | 1.161 | 1.090 | 0.920 | 1.110 | 1.150 | 1.130 | 1.150 |
| Open Pressure | 350 | 240 | 355 | 230 | 370 | 371 | 260 | 260 | 446 | 405 | 265 | 375 |
| Spring Rate | 409 | 264 | 341 | 270 | 400 | 353 | 258 | 330 | 394 | 379 | 255 | 353 |
| O.D. of Outer | 1.255 | 1.125 | 1.311 | 1.025 | 1.206 | 1.311 | 1.101 | 1.126 | 1.340 | 1.295 | 1.175 | 1.311 |
| I.D. of Outer | 0.830 | 0.642 | 0.650 | 0.565 | 0.630 | 0.650 | 0.650 | 0.640 | 0.994 | 0.949 | 0.642 | 0.650 |
| I.D. of Inner | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0.726 | 0.676 | N/A | N/A |
| Coil Bind Ht. | 1.100 | 1.080 | 1.085 | 1.100 | 1.170 | 1.100 | 1.020 | 0.880 | 1.050 | 1.100 | 1.080 | 1.100 |
| Damper | No | No | No | No | No | No | No | No | No | No | No | No |
| Inches | | | | | | | | | | | | |
| 2.000 | | | 82 | | 54 | 79 | | | 95 | 83 | | 79 |
| 1.950 | 33 | | 99 | | 74 | 97 | | | 115 | 102 | | 97 |
| 1.900 | 54 | 37 | 116 | | 94 | 115 | | | 135 | 121 | 69 | 115 |
| 1.850 | 74 | 50 | 133 | 46 | 114 | 132 | 63 | | 154 | 140 | 82 | 132 |
| 1.800 | 95 | 64 | 150 | 60 | 134 | 150 | 76 | | 174 | 159 | 95 | 150 |
| 1.750 | 115 | 77 | 167 | 73 | 154 | 168 | 89 | | 194 | 178 | 107 | 168 |
| 1.700 | 135 | 90 | 184 | 87 | 174 | 185 | 102 | | 213 | 197 | 120 | 185 |
| 1.650 | 156 | 103 | 201 | 100 | 194 | 203 | 115 | | 233 | 216 | 133 | 203 |
| 1.600 | 176 | 116 | 218 | 114 | 214 | 221 | 128 | 36 | 253 | 235 | 146 | 221 |
| 1.550 | 197 | 130 | 235 | 127 | 234 | 238 | 141 | 53 | 273 | 254 | 158 | 238 |
| 1.500 | 217 | 143 | 252 | 141 | 254 | 256 | 154 | 69 | 292 | 273 | 171 | 256 |
| 1.450 | 238 | 156 | 269 | 154 | 274 | 274 | 167 | 86 | 312 | 292 | 184 | 274 |
| 1.400 | 258 | 169 | 286 | 168 | 294 | 291 | 180 | 102 | 332 | 311 | 197 | 291 |
| 1.350 | 279 | 182 | 303 | 181 | 314 | 309 | 192 | 119 | 351 | 330 | 209 | 309 |
| 1.300 | 299 | 196 | 321 | 195 | 334 | 327 | 205 | 135 | 371 | 349 | 222 | 327 |
| 1.250 | 320 | 209 | 338 | 208 | 354 | 344 | 218 | 152 | 391 | 367 | 235 | 344 |
| 1.200 | 340 | 222 | 355 | 222 | 374 | 362 | 231 | 168 | 410 | 386 | 248 | 362 |
| 1.150 | 360 | 235 | 372 | 235 | | 379 | 244 | 185 | 430 | 405 | 260 | 379 |
| 1.100 | | 248 | 389 | | | | | 257 | 450 | | 273 | |
| 1.050 | | | | | | | | 270 | | | | |
| 1.000 | | | | | | | | | 218 | | | |
| 0.950 | | | | | | | | | 234 | | | |
| 0.900 | | | | | | | | | 251 | | | |
| | | | | | | | | | 267 | | | |
| LOAD (LBS.) | | | | | | | | | | | | |

STREET MASTER / PROFESSIONAL SERIES
STREET/STRIP, OVAL TRACK & DRAG RACE VALVE SPRINGS
LOAD CHART

CYL HEAD COMPONENTS

| P/N Type of Spring | 22406 Single | 22407 Double | 22408 Double | 22409 Single | 22410 Single | 22411 Single | 22429 Double | 22430 Double | 22431 Double | 22440 Double | 22441 Double |
|-----------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Installed Ht. | 1.875 | 1.800 | 1.800 | 1.700 | 1.750 | 1.750 | 1.880 | 1.900 | 1.950 | 1.850 | 1.900 |
| Inst. Pressure | 125 | 135 | 115 | 110 | 130 | 115 | 150 | 210 | 225 | 250 | 170 |
| Open Ht. | 1.375 | 1.250 | 1.200 | 1.210 | 1.200 | 1.175 | 1.280 | 1.250 | 1.250 | 1.150 | 1.200 |
| Open Pressure | 355 | 350 | 350 | 285 | 334 | 390 | 425 | 525 | 580 | 680 | 500 |
| Spring Rate | 460 | 418 | 392 | 357 | 370 | 470 | 458 | 484 | 507 | 614 | 471 |
| O.D. of Outer | 1.550 | 1.437 | 1.437 | 1.250 | 1.260 | 1.255 | 1.550 | 1.550 | 1.550 | 1.550 | 1.550 |
| I.D. of Outer | 1.080 | 1.060 | 1.060 | 0.865 | 0.876 | 0.870 | 1.130 | 1.130 | 1.115 | 1.115 | 1.115 |
| I.D. of Inner | N/A | 0.720 | 0.720 | N/A | N/A | N/A | 0.740 | 0.735 | 0.725 | 0.720 | 0.740 |
| Coil Bind Ht. | 1.190 | 1.085 | 1.100 | 1.180 | 1.095 | 1.100 | 1.180 | 1.200 | 1.190 | 1.090 | 1.100 |
| Damper | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Inches | | | | | | | | | | | |
| 2.150 | | | | | | | | | 124 | | |
| S 2.100 | | | | | | | | 113 | 149 | | 76 |
| P 2.050 | 45 | | | | | | 72 | 137 | 174 | 127 | 99 |
| R 2.000 | 68 | 51 | 37 | | | | 95 | 162 | 200 | 158 | 123 |
| I 1.950 | 91 | 72 | 56 | | 56 | 21 | 118 | 186 | 225 | 189 | 146 |
| N 1.900 | 114 | 93 | 76 | 39 | 75 | 45 | 141 | 210 | 250 | 219 | 170 |
| G 1.850 | 137 | 114 | 95 | 56 | 93 | 68 | 164 | 234 | 276 | 250 | 194 |
| 1.800 | 160 | 135 | 115 | 74 | 112 | 92 | 187 | 258 | 301 | 281 | 217 |
| 1.750 | 183 | 156 | 135 | 92 | 130 | 115 | 210 | 283 | 326 | 311 | 241 |
| 1.700 | 206 | 177 | 154 | 110 | 149 | 139 | 233 | 307 | 352 | 342 | 264 |
| H 1.650 | 229 | 198 | 174 | 128 | 167 | 162 | 256 | 331 | 377 | 373 | 288 |
| E 1.600 | 252 | 219 | 193 | 146 | 186 | 186 | 279 | 355 | 402 | 404 | 311 |
| I 1.550 | 275 | 240 | 213 | 164 | 204 | 209 | 301 | 379 | 428 | 434 | 335 |
| G 1.500 | 298 | 260 | 233 | 181 | 223 | 233 | 324 | 404 | 453 | 465 | 358 |
| H 1.450 | 321 | 281 | 252 | 199 | 241 | 256 | 347 | 428 | 479 | 496 | 382 |
| T 1.400 | 344 | 302 | 272 | 217 | 260 | 280 | 370 | 452 | 504 | 526 | 406 |
| 1.350 | 367 | 323 | 291 | 235 | 278 | 303 | 393 | 476 | 529 | 557 | 429 |
| 1.300 | 390 | 344 | 311 | 253 | 297 | 327 | 416 | 500 | 555 | 588 | 453 |
| 1.250 | 413 | 365 | 331 | 271 | 315 | 350 | 439 | 525 | 580 | 618 | 476 |
| 1.200 | | 386 | 350 | 289 | 334 | 374 | 462 | | | 649 | 500 |
| 1.150 | | 407 | 370 | | 352 | 397 | | | | 680 | 523 |
| | LOAD (LBS.) | | | | | | | | | | |

SPRING RETAINERS

CYL HEAD COMPONENTS

MANLEY RETAINERS

....SIMPLY THE BEST!

- ✓ Engineered using finite element analysis
 - ✓ Specially heat treated titanium material
- ✓ Exclusive "impingement" finishing process
 - ✓ TensileMax steel alloy
- ✓ CNC machined to exacting tolerances
and jewel-like surface finishes



Lightweight Titanium



TensileMax Steel



H-13 Tool Steel



ICD Titanium



7° & 10° Titanium

SPRING RETAINERS

ICD SUPER 7° TITANIUM RETAINERS PAT. 5,322,039

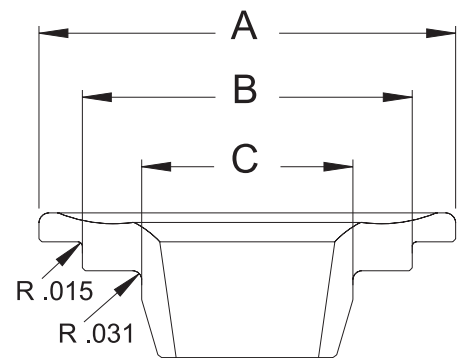
Designed by our own Michael Tokarchik, the Manley ICD retainer represents the pinnacle of titanium retainer technology.

- ✓ Using Finite Element Analysis, the convoluted O.D. is engineered to provide the optimum balance of fatigue strength, weight and stress distribution.
- ✓ Holes precisely located through the retainers' cross section introduce oil to the valve spring at the critical inner to outer spring interface, greatly extending valve spring life.
- ✓ Finally, the heat-treated aerospace grade titanium alloy is surface enhanced with Manley's exclusive impingement process. This process eliminates all machining marks, improves fatigue strength and elevates surface hardness, thus reducing wear on both the ID and the spring shelves.
- ✓ Due to the larger .031" radius on the corner of the inner step, the I.D. of each valve spring, specifically the inner spring, must be chamfered prior to installation. It is highly recommended to use Manley's valve spring chamfering tool, P/N 40174.
- ✓ As light as 14 grams depending on part number.

Super 7° ICD retainers require use of Super 7° valve locks.



CYL HEAD COMPONENTS



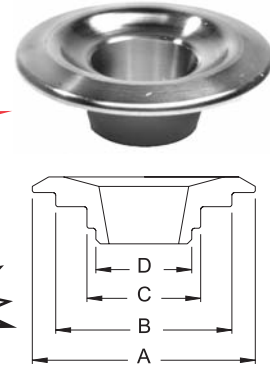
ICD SUPER 7° TITANIUM RETAINERS

| Part No. | Quantity | Spring Type | Spring | Spring O.D. | Dimensions | | | Wgt/ Grams |
|--------------|----------|-------------|------------------------------|-----------------|------------|--------|-------|------------|
| | | | | | A | B | C | |
| 23669 ICD-16 | 16 pcs. | Double | Comp 26099 | 1.550" - 1.625" | 1.440" | 1.175" | .765" | 18 |
| 23672 ICD-16 | 16 pcs. | Double | Manley 221441P, 22429, 22430 | 1.550" - 1.625" | 1.440" | 1.125" | .730" | 14 |
| 23674 ICD-16 | 16 pcs. | Double | Comp 927, Isky 9315, 9365 | 1.550" - 1.625" | 1.440" | 1.140" | .730" | 16 |
| 23681 ICD-16 | 16 pcs. | Double | Manley 221443, 221444 | 1.580" - 1.610" | 1.440" | 1.150" | .825" | 18 |
| 23691 ICD-16 | 16 pcs. | Double | Same as 23681 except +.050" | 1.580" - 1.610" | 1.440" | 1.150" | .825" | 18 |
| 23682 ICD-16 | 16 pcs. | Double | Manley 221442 | 1.560" | 1.440" | 1.120" | .805" | 17 |
| 23705 ICD-16 | 16 pcs. | Double | Manley 221440P | 1.560" | 1.440" | 1.140" | .745" | 16 |

SPRING RETAINERS

SUPER 7° TITANIUM RETAINERS

- ✓ Super 7° angle is actually 8°
- ✓ Heat treated titanium material for maximum strength
- ✓ Available with or without our exclusive impingement surface enhancement process
- ✓ Impingement results in a 20% improvement in resistance to abrasion, a 30% improvement in fatigue strength, and an overall improvement in surface finish
- ✓ "L" Suffix indicates Lightweight version which is 3-4 grams lighter than standard part number



CYL HEAD COMPONENTS

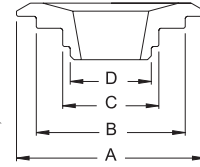
| Part No. | Part No. w/ Impinge | Quantity | Spring Type | Spring | Spring O.D. | Keeper Degree | Dimensions | | | | Wgt/ Grams |
|------------|------------------------|----------|----------------|---|-----------------|------------------|------------|--------|-------|-------|---------------|
| | | | | | | | A | B | C | D | |
| 23746 L-16 | ----- | 16 pcs. | Double | Manley 221446SF | 1.400" | Super 7° | 1.260" | .980" | .690" | --- | 12 |
| 23700 L-16 | 23700 LI-16 | 16 pcs. | Double | PSI CT1040 | 1.500" | Super 7° | 1.450" | 1.080" | .785" | --- | 16 |
| 23707-16 | ----- | 16 pcs. | Double | Manley 221432 | 1.530" / 1.575" | Super 7° | 1.500" | 1.125" | .740" | --- | 20 |
| 23670-16 | 23670 I-16 | 16 pcs. | Double | Manley 22431, 22440, 22441 | 1.550" | Super 7° | 1.500" | 1.105" | .710" | --- | 19 |
| 23671-16 | ----- | 16 pcs. | Double | K Motion K-1600 | 1.550" | Super 7° | 1.500" | 1.150" | .755" | --- | 21 |
| 23672-16 | 23672 I-16 | 16 pcs. | Double | Manley 221441P, 22429, 22430 | 1.550" | Super 7° | 1.500" | 1.125" | .730" | --- | 18 |
| 23672 L-16 | ----- | 16 pcs. | Double | 20% lighter than 23672 | 1.550" | Super 7° | 1.500" | 1.125" | .730" | --- | 14 |
| 23674 L-16 | 23674 LI-16 | 16 pcs. | Double | Comp. 927 | 1.550" | Super 7° | 1.500" | 1.140" | .730" | --- | 17 |
| 23669-16 | ----- | 16 pcs. | Double | Comp 26099 | 1.550"/1.625" | Super 7° | 1.500" | 1.175" | .765" | --- | 21 |
| 23705 L-16 | 23705 LI-16 | 16 pcs. | Double | Manley 221440P | 1.560" | Super 7° | 1.450" | 1.140" | .745" | --- | 16 |
| 23706 L-16 | 23706 LI-16 | 16 pcs. | Double | .050" more installed than 23705 L | 1.560" | Super 7° | 1.450" | 1.140" | .745" | --- | 16 |
| 23682-16 | 23682 I-16 | 16 pcs. | Double | Manley 221442 | 1.560" | Super 7° | 1.500" | 1.120" | .805" | --- | 21 |
| 23682 L-16 | 23682 LI-16 | 16 pcs. | Double | 16% lighter than 23682 | 1.560" | Super 7° | 1.500" | 1.120" | .805" | --- | 17 |
| 23681-16 | 23681 I-16 | 16 pcs. | Double | Manley 221443, 221444 | 1.580" / 1.610" | Super 7° | 1.500" | 1.150" | .825" | --- | 21 |
| 23681 L-16 | 23681 LI-16 | 16 pcs. | Double | 17% lighter than 23681 | 1.580" / 1.610" | Super 7° | 1.450" | 1.150" | .825" | --- | 18 |
| 23691-16 | ----- | 16 pcs. | Double | .050" more installed than 23681 | 1.580" / 1.610" | Super 7° | 1.500" | 1.150" | .825" | --- | 20 |
| 23685-16 | 23685 I-16 | 16 pcs. | Double | Manley 221445P | 1.620" | Super 7° | 1.500" | 1.175" | .840" | --- | 20 |
| 23685 L-16 | 23685 LI-16 | 16 pcs. | Double | 16% lighter than 23685 | 1.620" | Super 7° | 1.460" | 1.175" | .840" | --- | 17 |
| 23680-16 | 23680 I-16 | 16 pcs. | Double | Isky 9685 | 1.625" | Super 7° | 1.500" | 1.185" | .760" | --- | 21 |
| 23708 L-16 | ----- | 16 pcs. | Triple | Manley 221447, 221448 221449, 221450 | 1.660" | Super 7° | 1.450" | 1.185" | .870" | .635" | 17 |

Please call with your custom retainer requirements.

SPRING RETAINERS

10° TITANIUM RETAINERS

- ✓ Special 6AL-4V titanium for maximum strength
- ✓ Excellent value for all forms of racing



CYL HEAD COMPONENTS

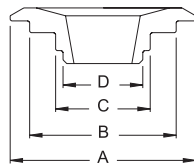
| Part No. | Quantity | Spring Type | Spring | Height | Spring O.D. | Keeper Degree | Dimensions | | | | Wgt/ Grams |
|----------|----------|-------------|---|--------|-------------------|---------------|------------|--------|-------|-------|------------|
| | | | | | | | A | B | C | D | |
| 23630-16 | 16 pcs. | Outer-Inner | 22406, 22407, 22408 | Std. | 1.437"/ 1.550" | 10° | 1.440" | 1.050" | .700" | --- | 15 |
| 23684-16 | 16 pcs. | Double | Manley 221455, 221456, 221457, 221460 | Std. | 1.500" | 10° | 1.325" | 1.035" | .705" | --- | 14 |
| 23644-16 | 16 pcs. | Double | Manley 221432, Manley 221440P, Comp. 927 | Std. | 1.550" | 10° | 1.500" | 1.140" | .740" | --- | 17 |
| 23658-16 | 16 pcs. | Double | Manley 22431, 22440, 22441 | Std. | 1.550" | 10° | 1.500" | 1.105" | .710" | --- | 16 |
| 23657-16 | 16 pcs. | Double | Manley 22429, 22430 | Std. | 1.550" | 10° | 1.500" | 1.120" | .705" | --- | 18 |
| 23649-16 | 16 pcs. | Double | Manley 221424, 221425, 221454 | Std. | 1.625" | 10° | 1.500" | 1.175" | .850" | --- | 19 |
| 23654-16 | 16 pcs. | Double | Comp. 26099 | Std. | 1.625" | 10° | 1.500" | 1.175" | .765" | --- | 17 |
| 23663-16 | 16 pcs. | Triple | Manley 221447, 221448, 221449, 221450 | Std. | 1.660" | 10° | 1.500" | 1.185" | .860" | .620" | 21 |
| 23676-16 | 16 pcs. | Double | Manley 221455 221456, 221457, 221460 | +100" | 1.500" | 10° | 1.325" | 1.035" | .705" | --- | 13 |
| 23641-16 | 16 pcs. | Triple | Crane 99882 | +100" | 1.550" | 10° | 1.500" | 1.130" | .735" | .640" | 17 |
| 23650-16 | 16 pcs. | Double | Manley 221432, Manley 221440P, Comp. 927 | +100" | 1.550" | 10° | 1.500" | 1.140" | .740" | --- | 18 |
| 23660-16 | 16 pcs. | Double | Manley 22431, 22440, 22441 | +100" | 1.550" | 10° | 1.500" | 1.105" | .710" | --- | 17 |
| 23661-16 | 16 pcs. | Double | Manley 22429, 22430 | +100" | 1.550" | 10° | 1.500" | 1.120" | .705" | --- | 17 |
| 23647-16 | 16 pcs. | Double | Manley 221441P, Comp. 938, K-950 | +100" | 1.550" | 10° | 1.500" | 1.120" | .730" | --- | 18 |
| 23643-16 | 16 pcs. | Double | Manley 221442 | +100" | 1.560" | 10° | 1.500" | 1.120" | .805" | --- | 19 |
| 23648-16 | 16 pcs. | Double | Manley 221443, Manley 221444, Comp. 951 | +100" | 1.580"/ 1.610" | 10° | 1.500" | 1.150" | .825" | --- | 20 |
| 23655-16 | 16 pcs. | Double | Comp. 26099 | +100" | 1.625" | 10° | 1.500" | 1.175" | .765" | --- | 17 |
| 23640-16 | 16 pcs. | Double | Manley 221424, 221425, 221454 | +100" | 1.625" | 10° | 1.500" | 1.175" | .850" | --- | 20 |
| 23662-16 | 16 pcs. | Triple | Comp. 948 | +100" | 1.625" | 10° | 1.500" | 1.190" | .875" | .640" | 19 |
| 23665-16 | 16 pcs. | Triple | K-1400 | +100" | 1.625" | 10° | 1.500" | 1.185" | .765" | .645" | 18 |
| 23653-16 | 16 pcs. | Triple | Manley 221447, 221448, 221449, 221450 | +100" | 1.660" | 10° | 1.500" | 1.185" | .860" | .620" | 19 |

Please call with your custom retainer requirements.

SPRING RETAINERS

LIGHTWEIGHT 10° TITANIUM RETAINERS

- ✓ Squeeze more RPM's out of your engine
- ✓ Avoid valve float
- ✓ Lightweight retainer does not sacrifice reliability
- ✓ 16 grams - compared to normal 19 to 21 grams
- ✓ Special heat treated titanium for maximum strength
- ✓ Must use 10° valve locks



CYL HEAD COMPONENTS

| Part No. | Quantity | Spring Type | Spring | Height | Spring O.D. | A | Dimensions B | C | D | Wgt/ Grams |
|-------------------------------|----------|-------------|--|--------|--------------------|--------|--------------|-------|-------|------------|
| 23540-16 | 16 pcs. | Double | Manley 221424, 221425, 221454 | +100" | 1.625" | 1.430" | 1.175" | .850" | --- | 17 |
| 23562-16 | 16 pcs. | Triple | Pacaloy Comp 946, 947, 948 | +100" | 1.625" / 1.650" | 1.430" | 1.190" | .875" | .640" | 16 |
| 23553-16 | 16 pcs. | Triple | Manley 221447, 221448, 221449, 221450 | +100" | 1.660" | 1.430" | 1.185" | .860" | .620" | 16 |
| 23553 I-16 | 16 pcs. | Triple | Manley 221447, 221448, 221449, 221450 | +100" | 1.660" | 1.430" | 1.185" | .860" | .620" | 16 |
| 23553 I retainer is impinged. | | | | | | | | | | |
| 23679-16* | 16 pcs. | Double | Manley 221455, 221456, 221457, 221460 | +100" | 1.500" | 1.325" | 1.035" | .705" | --- | 14 |
| 23683-16* | 16 pcs. | Double | Manley 221455, 221456, 221457, 221460 | +170" | 1.500" | 1.325" | 1.035" | .705" | --- | 14 |
| 23686-16* | 16 pcs. | Double | Manley 221463 | +100" | 1.585" | 1.350" | 1.115" | .790" | --- | 16 |
| 23753-16* | 16 pcs. | Triple | Manley 221447, 221448, 221449, 221450 | +100" | 1.660" | 1.430" | 1.185" | .860" | .620" | 17 |

* Made from our high strength TI-17 Titanium Material

7° TITANIUM RETAINERS

- ✓ CAD designed for ultimate reduction in mass without sacrificing strength



| Part No. | Quantity | Manley Spring | Installed Height | Retainer O.D. | Spring O.D. | Spring I.D. | Keeper Degree X | Valve Stem | Wgt/ Grams |
|------------------|----------|-----------------------------------|------------------|---------------|---------------|-------------|-------------------|------------|------------|
| 23628-24 | 24 pcs. | 221429 | Std. | .775" | .880" | .565" | 7° x 6mm | 4 | |
| 23614-24 | 24 pcs. | 221433 | Std. | .875" | 1.013" | .650" | 7° x 6mm | 5 | |
| 23627-16 | 16 pcs. | 221427/221437 | Std. | .875" | 1.020"/1.030" | .642" | 7° x 7mm | 5 | |
| 23667-16 | 16 pcs. | 221427/221437 | +0.060" | .875" | 1.020"/1.030" | .642" | 7° x 7mm | 5 | |
| 23629-16 | 16 pcs. | 221430 | Std. | .915" | 1.056" | .630" | 7° x 5/16" | 5 | |
| 23613-16 | 16 pcs. | 221431 | Std. | .935" | 1.076" | .650" | 7° x 5/16" | 6 | |
| 23622-16 | 16 pcs. | 221428/221438 | Std. | .935" | 1.076" | .650" | 7° x 8mm | 5 | |
| 23625-16 | 16 pcs. | 221428/221438 | +0.050" | .935" | 1.076" | .650" | 7° x 8mm | 5 | |
| 23626-16 | 16 pcs. | 221428/221438 | +0.050" | .935" | 1.076" | .650" | 7° x 11/32" | 6 | |
| 23642-16 | 16 pcs. | 22409, 22410 | +0.050" | 1.150" | 1.250" | .865" | 7° x 11/32" | 9 | |
| 23632-16 | 16 pcs. | 221423 | Std. | 1.155" | 1.255" | .830" | 7° x 8mm | 9 | |
| 23633-16 | 16 pcs. | 221423 | +0.050" | 1.155" | 1.255" | .830" | 7° x 8mm | 8 | |
| 23634-16 | 16 pcs. | 221423 | +0.050" | 1.150" | 1.255" | .830" | 7° x 11/32" | 9 | |
| 23617-16 | 16 pcs. | 221436 | Std. | 1.155" | 1.290"/1.295" | .674"/.676" | 7° x 8mm | 10 | |
| 23623-16 | 16 pcs. | 221436 | +0.050" | 1.155" | 1.290"/1.295" | .674"/.676" | 7° x 8mm | 10 | |
| 23624-16 | 16 pcs. | 221436 | +0.050" | 1.155" | 1.290"/1.295" | .674"/.676" | 7° x 11/32" | 10 | |
| 23611-16 | 16 pcs. | 221435 | +0.050" | 1.200" | 1.340" | .726" | 7° x 8mm | 11 | |
| 23638-16 | 16 pcs. | 22408 | Std. | 1.340" | 1.437" | .720" | 7° x 8mm | 14 | |
| 23639-16 | 16 pcs. | 22408 | +0.050" | 1.340" | 1.437" | .720" | 7° x 8mm | 14 | |
| 23675-16 | 16 pcs. | 221455, 221456, 221457, 221460 | +100" | 1.325" | 1.500" | .719" | 7° x 11/32", 3/8" | 14 | |
| 23677-16* | 16 pcs. | 221455, 221456, 221457, 221460 | +100" | 1.325" | 1.500" | .719" | 7° x 11/32", 3/8" | 15 | |
| 23673-16 | 16 pcs. | 221447, 221448, 221449, 221450 | +100" | 1.500" | 1.660" | .635" | 7° x 11/32", 3/8" | 20 | |

* Made from our high strength Super 7 Titanium Material

P/N's 23611, 23623, 23632, 23633, 23638, 23639, 23622, & 23625 must use Manley 13098 or factory Chevrolet LS valve locks.

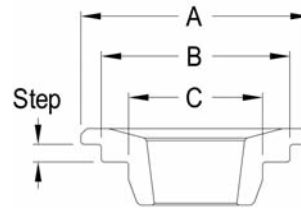
P/N's 23624, 23634, 23626, & 23642 are for the following engine models: LT-1 / LT-4 / L-98. Must use Manley 13091.

Note: New part numbers are **ITALICIZED**.

SPRING RETAINERS

SPORT COMPACT TITANIUM RETAINERS

- ✓ Heat treated aerospace grade titanium
- ✓ CNC machined to exacting tolerances
- ✓ Lightweight and extremely durable
- ✓ A must for your high revving sport compact engine



| Part No. | Application | Spring | Valve Stem Diameter | Valve Lock Degree | Dimensions | | | Step | Wgt/ Grams |
|----------|--|------------------------|---------------------|-------------------|------------|-------|-------|-------|------------|
| | | | | | A | B | C | | |
| 23000-16 | Acura B18C / B16A / H22 | Stock Spring | 5.5 mm | 7° | 1.100" | .830" | .600" | .080" | 6 |
| 23100-16 | Acura B16A / B18C / B17A Honda H22 V-Tec | Manley 22105, 22110 | 5.5 mm | 7° | 1.150" | .850" | .650" | .080" | 7 |
| 23120-16 | Honda B18A / B (Non V-Tec) | Manley 22120 | 6.5 mm | 7° | 1.100" | .805" | .610" | .080" | 6 |
| 23140-16 | Honda K20A/K20Z | Manley 22140 | 5.5 mm | 7° | 1.050" | .850" | .610" | .080" | 7 |
| 23145-16 | Honda K20A3/K24A | Manley 22145 | 5.5 mm | 7° | 1.050" | .775" | .610" | .045" | 8 |
| 23150-16 | Honda F20C/F22C | Manley 22150 | 5.5 mm | 7° | 1.050" | .850" | .610" | .080" | 7 |
| 23190-16 | Dodge SRT-4 | Manley 22190 | 6.0 mm | 7° | 1.050" | .760" | ---- | .100" | 6 |
| 23115-16 | Mitsubishi 4G63-4G63T DOHC 16 Valve (1990-1999) | Manley 22115 | 6.6 mm | 6° | 1.050" | .850" | .610" | .040" | 8 |
| 23125-16 | Mitsubishi 4G63-4G63T DOHC 16 Valve (1990-2006) | Manley 22125 | 6.6 mm | 6° | 1.050" | .760" | ---- | .140" | 9 |
| 23195-16 | Mitsubishi EVO X 4B11T | Manley 22195 | 5.5 mm | 7.5° | .960" | .690" | ---- | .100" | 7 |
| 23155-24 | Nissan Patrol TB48 | Manley 22155 | 6.0 mm | 6° | 1.050" | .760" | ---- | .080" | 7 |
| 23160-16 | Nissan KA24DE | Manley 22160 | 7.0 mm | 7° | 1.150" | .850" | .650" | .080" | 9 |
| 23165-16 | Nissan SR20DE/SR20DET | Manley 22165 | 6.0 mm | 6° | 1.150" | .825" | ---- | .080" | 10 |
| 23170-24 | Nissan VQ35DET | Manley 22170 | 5.5 mm | 6° | .960" | .690" | ---- | .140" | 8 |
| 23175-24 | Nissan RB26DETT | Manley 22175 | 6.0 mm | 6° | 1.050" | .760" | ---- | .080" | 8 |
| 23180-16 | Subaru WRX/Sti | Manley 22180 | 6.0 mm | 6° | 1.050" | .745" | .515" | .100" | 6 |
| 23185-16 | Subaru WRX/Sti | Manley 22185 | 6.0 mm | 6° | .875" | .627" | .465" | .095" | 5 |
| 23130-24 | Toyota Supra 2JZGT/2JZGTE 6 cyl. | Manley 22130 | 6.0 mm | 6° | 1.050" | .745" | .515" | .100" | 6 |

SPORT COMPACT VALVE SPRING & RETAINER KITS

- ✓ Wound from super clean alloy
- ✓ Designed to handle aftermarket camshafts



| Part No. Without Valve Locks | Part No. With Valve Locks | Application | Max Net Lift | Spring No. | Titanium Retainer No. | Valve Locks |
|------------------------------|---------------------------|--|--------------|------------|-----------------------|-------------|
| 26105 | 26105K | Acura B Series, V-Tec | .535" | 22105-16 | 23100-16 | 13010-8 |
| 26110 | 26110K | Honda H22, V-Tec | .560" | 22110-16 | 23100-16 | 13010-8 |
| 26120 | ----- | Honda B Series, Non V-Tec | .615" | 22120-16 | 23120-16 | ----- |
| 26140 | 26140K | Honda K20A/K20Z | .540" | 22140-16 | 23140-16 | 13010-8 |
| 26145 | 26145K | Honda K20A3/K24A | .545" | 22145-16 | 23145-16 | 13010-8 |
| 26150 | 26150K | Honda F20C/F22C | .530" | 22150-16 | 23150-16 | 13010-8 |
| 26190 | ----- | Dodge SRT-4 | .500" | 22190-16 | 23190-16 | ----- |
| 26115* | 26115K* | Mitsubishi 4G63-4G63T DSM DOHC 16 Valve (1990-1999) | .460" | 22115-16 | 23115-16 | 13016-8 |
| 26125 | 26125K | Mitsubishi 4G63-4G63T DSM / EVO DOHC 16 Valve (1990-2006) | .580" | 22125-16 | 23125-16 | 13016-8 |
| 26195 | ----- | Mitsubishi EVO X 4B11T | .430" | 22195-16 | 23195-16 | ----- |
| 26155 | ----- | Nissan Patrol TB48 | .550" | 22155-24 | 23155-24 | ----- |
| 26160* | ----- | Nissan KA24DE | .500" | 22160-16 | 23160-16 | ----- |
| 26165 | 26165K | Nissan SR20DE/SR20DET | .540" | 22165-16 | 23165-16 | 13012-8 |
| 26170 | ----- | Nissan VQ35DET | .455" | 22170-24 | 23170-24 | ----- |
| 26175 | 26175K | Nissan RB26DETT | .535" | 22175-24 | 23175-24 | 13012-8 |
| 26180 | ----- | Subaru WRX/Sti | .525" | 22180-16 | 23180-16 | ----- |
| 26185 | ----- | Subaru WRX/Sti | .490" | 22185-16 | 23185-16 | ----- |
| 26130 | 26130K | Toyota Supra, 2JZGT/2JZGTE 6 cyl. | .430" | 22130-24 | 23130-24 | 13014-8 |

* These kits also include spring locators.

SPRING RETAINERS

TENSILEMAX STEEL RETAINERS

These are serious retainers for serious engine builders who DEMAND THE VERY BEST...

- ✓ Manufactured from our incredibly tough TensileMax alloy
- ✓ Designed to be as light as standard titanium retainers and very close in weight to lightweight titanium versions (within 2-4 grams)
- ✓ Specially heat treated to provide a hardness of Rc 52-54 and prevent retainer wear
- ✓ Exclusive process yields a part that provides the optimum balance between ultimate strength, fatigue strength, hardness and ductility
- ✓ Unique impingement process developed specifically for our TensileMax alloy and hardness range to improve fatigue strength and promote better oiling between the spring and retainer

CYL HEAD COMPONENTS



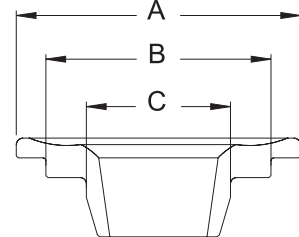
Standard TensileMax



Convuluted TensileMax



Double Convuluted TensileMax



| Part No. | Quantity | Spring Type | Spring | Spring O.D. | Keeper Degree | Dimensions | | | Profile | Wgt/ Grams |
|---------------------|----------|-------------|---|-------------|---------------|------------|--------|-------|-------------------|------------|
| | | | | | | A | B | C | | |
| 23746TM-16 | 16 pcs. | Double | Manley 221446SF | 1.400" | Super 7° | 1.260" | .980" | .690" | Standard | 16 |
| 23675TM-16 | 16 pcs. | Double | Manley 221455, 221456 221457, 221460 | 1.500" | 7° (+.100") | 1.325" | 1.035" | .705" | Standard | 18 |
| 23676TM-16 | 16 pcs. | Double | Manley 221455, 221456 221457, 221460 | 1.500" | 10° (+.100") | 1.325" | 1.035" | .705" | Standard | 17 |
| 23707TM-16 | 16 pcs. | Double | Manley 221432 | 1.530" | Super 7° | 1.420" | 1.125" | .740" | Convuluted | 21 |
| 23670TM-16 | 16 pcs. | Double | Manley 22431, 22440, 22441 | 1.550" | Super 7° | 1.420" | 1.105" | .710" | Convuluted | 20 |
| 23674TM-16 | 16 pcs. | Double | Comp. 927 | 1.550" | Super 7° | 1.440" | 1.140" | .730" | Standard | 22 |
| 23682TM-16 | 16 pcs. | Double | Manley 221442 | 1.560" | Super 7° | 1.440" | 1.120" | .805" | Standard | 23 |
| 23672TM-16 | 16 pcs. | Double | Manley 221441P, 22429, 22430 | 1.570" | Super 7° | 1.440" | 1.125" | .730" | Standard | 20 |
| 23705TM-16 | 16 pcs. | Double | Manley 221440P | 1.570" | Super 7° | 1.440" | 1.140" | .745" | Standard | 22 |
| 23705LTM-16 | 16 pcs. | Double | 14% lighter than 23705TM | 1.570" | Super 7° | 1.440" | 1.140" | .745" | Standard | 19 |
| 23686TM-16 | 16 pcs. | Double | Manley 221463 | 1.585" | 10° (+.100") | 1.350" | 1.115" | .790" | Standard | 19 |
| 23685TM-16 | 16 pcs. | Double | Manley 221445P | 1.620" | Super 7° | 1.460" | 1.175" | .840" | Standard | 23 |
| 23685DCTM-16 | 16 pcs. | Double | Manley 221445P | 1.620" | Super 7° | 1.460" | 1.175" | .840" | Double Convuluted | 22 |

LIGHTWEIGHT H-13 TOOL STEEL RETAINERS

For those searching for a slightly more economical alternative to titanium retainers, either to help solve a "wear problem" or because of "class rules," Manley lightweight H-13 Tool Steel retainers are your solution! H-13 tool steel allows for better processing than "other" tool steels typically utilized; thus yielding a stronger, more durable product.

- ✓ Up to 33% lighter than standard 10° steel retainers
- ✓ Only 2-4 grams heavier than titanium versions
- ✓ Heat treated to provide hardness of Rc 56



| Part No. | Quantity | Spring Type | Spring | Spring O.D. | Keeper Degree | Dimensions | | | Wgt/ Grams |
|-------------------|----------|-------------|------------------------------|---------------|---------------|------------|--------|-------|------------|
| | | | | | | A | B | C | |
| 23616TS-16 | 16 pcs. | Double | Manley 221436 | 1.290" | 10° (+.050") | 1.155" | .950" | .675" | 15 |
| 23746TS-16 | 16 pcs. | Double | Manley 221446SF | 1.400" | Super 7° | 1.260" | .980" | .690" | 17 |
| 23747TS-16 | 16 pcs. | Double | Manley 221446SF | 1.400" | 10° (+.100") | 1.260" | .980" | .690" | 18 |
| 23660TS-16 | 16 pcs. | Double | Manley 22431, 22440, 22441 | 1.550" | 10° (+.100") | 1.420" | 1.105" | .710" | 21 |
| 23643TS-16 | 16 pcs. | Double | Manley 221442 | 1.560" | 10° (+.100") | 1.440" | 1.120" | .805" | 23 |
| 23682TS-16 | 16 pcs. | Double | Manley 221442 | 1.560" | Super 7° | 1.440" | 1.120" | .805" | 23 |
| 23647TS-16 | 16 pcs. | Double | Manley 221441P, 22429, 22430 | 1.570" | 10° (+.100") | 1.440" | 1.120" | .730" | 22 |
| 23672TS-16 | 16 pcs. | Double | Manley 221441P, 22429, 22430 | 1.570" | Super 7° | 1.440" | 1.125" | .730" | 20 |
| 23648TS-16 | 16 pcs. | Double | Manley 221443, 221444 | 1.580"/1.610" | 10° (+.100") | 1.440" | 1.150" | .825" | 24 |
| 23681TS-16 | 16 pcs. | Double | Manley 221443, 221444 | 1.580"/1.610" | Super 7° | 1.440" | 1.150" | .825" | 24 |

Note: New part numbers are **ITALICIZED**.

Call your Manley salesman to inquire about custom H-13 tool steel retainers.

SPRING RETAINERS

SUPER 7° "SCD" STEEL RETAINERS

PATENT NO. 5,322,039

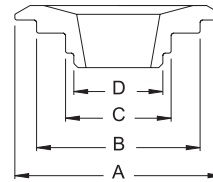
- ✓ Convuluted and drilled
- ✓ All the "trickest" features of our ICD titanium retainers
- ✓ Thru-hardened 4140 chrome moly steel
- ✓ 20% lighter than a steel 10° retainer
- ✓ Strategic holes to oil and cool springs



| Part No. | Material | Quantity | Manley Spring | Spring O.D. | Keeper Degree | Dimensions | | | Wgt/ Grams |
|--------------|----------|----------|---------------|---------------|---------------|------------|--------|-------|------------|
| | | | | | | A | B | C | |
| 23707 SCD-16 | Steel | 16 pcs. | 221432 | 1.530"/1.575" | Super 7° | 1.440" | 1.125" | .740" | 25 |
| 23670 SCD-16 | Steel | 16 pcs. | 22440 | 1.550" | Super 7° | 1.440" | 1.105" | .710" | 24 |

STREET MASTER STEEL VALVE SPRING RETAINERS

- ✓ CNC machined to exacting tolerances
- ✓ Thru-hardened 4140 chrome moly



| Part No. | Material | Quantity | Spring | Spring Height | Spring O.D. | Keeper Degree ^x | Valve Stem | Dimensions | | | | Wgt/ Grams |
|----------|----------|----------|----------------------------|---------------|---------------|----------------------------|------------|------------|-------|-------|----|------------|
| | | | | | | | | A | B | C | D | |
| 23612-16 | Steel | 16 pcs. | 221431 | Std. | 1.076" | 7° x 5/16" | .935" | .640" | --- | --- | 10 | |
| 23620-16 | Steel | 16 pcs. | 221428, 221438 | Std. | 1.076" | 7° x 8mm | .935" | .640" | --- | --- | 10 | |
| 23651-16 | Steel | 16 pcs. | 22409, 22410 | Std. | 1.250" | 7° x 11/32" | 1.245" | .865" | .680" | --- | 21 | |
| 23652-16 | Steel | 16 pcs. | 22409, 22410 | + .050" | 1.250" | 7° x 11/32" | 1.245" | .865" | .680" | --- | 21 | |
| 23631-16 | Steel | 16 pcs. | 221423 | Std. | 1.255" | 7° x 8mm | 1.155" | .825" | --- | --- | 17 | |
| 23664-16 | Steel | 16 pcs. | 221423 | + .050" | 1.255" | 7° x 11/32" | 1.150" | .825" | --- | --- | 16 | |
| 23621-16 | Steel | 16 pcs. | 221436 | + .050" | 1.290" | 7° x 8mm | 1.155" | .950" | .675" | --- | 17 | |
| 23610-16 | Steel | 16 pcs. | 221435 | + .050" | 1.340" | 7° x 8mm | 1.200" | .985" | .715" | --- | 19 | |
| 23645-16 | Steel | 16 pcs. | 22406, 22407, 22408 | Std. | 1.437"/1.550" | 7° x 11/32" | 1.440" | 1.050" | .700" | --- | 28 | |
| 23635-16 | Steel | 16 pcs. | 22406, 22407, 22408 | + .060" | 1.437"/1.550" | 10° x All | 1.440" | 1.050" | .700" | --- | 31 | |
| 23666-16 | Steel | 16 pcs. | 22406, 22407, 22408 | Std. | 1.437"/1.550" | 7° x 3/8" | 1.440" | 1.050" | .700" | --- | 31 | |
| 23646-16 | Steel | 16 pcs. | 22406, 22407, 22408 | + .100" | 1.437"/1.550" | 7° x 11/32" | 1.440" | 1.050" | .700" | --- | 30 | |
| 23636-16 | Steel | 16 pcs. | Crane 99882 | Std. | 1.550" | 10° x All | 1.500" | 1.130" | .735" | .640" | 29 | |
| 23659-16 | Steel | 16 pcs. | Manley 22431, 22440, 22441 | + .100" | 1.550" | 10° x All | 1.500" | 1.105" | .710" | --- | 31 | |
| 23656-16 | Steel | 16 pcs. | Manley 22429, 22430 | + .100" | 1.550" | 10° x All | 1.500" | 1.120" | .705" | --- | 31 | |

P/N 23610, 23620, 23621, & 23631 must use Manley 13098 or factory Chevrolet LS-1 valve locks.

VALVE SPRING SHIMS

- ✓ Available in .060", .030" and .015" thickness
- ✓ Heat treated to resist wear



| .060" | Part Numbers | | Quantity | O.D. | I.D. | Type | Description |
|----------|--------------|----------|----------|--------|-------|------|--------------------------------|
| | .030" | .015" | | | | | |
| 02236-50 | 02233-50 | 02231-50 | 50 pcs. | 1.250" | .812" | Hard | SB Chevy-stock size springs |
| 03236-50 | 03233-50 | 03231-50 | 50 pcs. | 1.480" | .703" | Hard | BB Chevrolet |
| 03256-50 | 03253-50 | 03251-50 | 50 pcs. | 1.437" | .785" | Hard | SB Chevrolet w/ larger springs |
| 03266-50 | 03263-50 | 03261-50 | 50 pcs. | 1.500" | .645" | Hard | Chevrolet - Chrysler |
| 03276-50 | 03273-50 | 03271-50 | 50 pcs. | 1.625" | .645" | Hard | Chevrolet - Chrysler -Ford |

SPRING CUPS & I.D. LOCATORS

O.D. VALVE SPRING CUPS

- ✓ CNC machined
- ✓ Accurate and durable .062" thick
- ✓ Heat treated and black oxide finished



CYL HEAD COMPONENTS

| Part No. | Quantity | Fits Spring O.D. | Cup O.D. | Cup I.D. | Wall Shoulder Height | Manley Spring | Use Cutter Number |
|----------|----------|------------------|----------|----------|----------------------|-----------------------------------|-------------------|
| 42142-16 | 16 pcs. | 1.250" | 1.390" | .570" | .150" | 22409, 22410 | 41850 |
| 42126-16 | 16 pcs. | 1.437" | 1.550" | .687" | .150" | 22407, 22408 | 41835 |
| 42122-16 | 16 pcs. | 1.550" | 1.680" | .635" | .150" | 22429, 22430, 22431, 22440, 22441 | 41852 |
| 42377-16 | 16 pcs. | 1.550" | 1.680" | .577" | .150" | 22429, 22430, 22431, 22440, 22441 | 41858 |
| 42370-16 | 16 pcs. | 1.580" | 1.687" | .570" | .140" | 221443 | 41858 |
| 42365-16 | 16 pcs. | 1.610" | 1.740" | .570" | .140" | 221444 | 41859 |
| 42121-16 | 16 pcs. | 1.625" | 1.740" | .635" | .150" | 221424, 221425, 221454 | 41851 |
| 42128-16 | 16 pcs. | 1.625" | 1.740" | .635" | .250" | 221424, 221425, 221454 | 41851 |
| 42379-16 | 16 pcs. | 1.650" | 1.740" | .570" | .250" | 221424, 221425, 221454 | 41859 |
| 42371-16 | 16 pcs. | 1.677" | 1.740" | .635" | .140" | 221447, 221448, 221449 221450 | 41851 |
| 42372-16 | 16 pcs. | 1.677" | 1.740" | .570" | .140" | 221447, 221448, 221449 221450 | 41859 |

PRO SERIES I.D. VALVE SPRING LOCATORS

- ✓ CNC machined to tolerances $\pm .002"$
- ✓ Excellent surface finish
- ✓ 8620 material heat treated and black oxide finished



| Part No. | Quantity | Fits Spring O.D. | Locator O.D. | Locator I.D. | Cup Thickness | Wall Shoulder Height | Shoulder Diameter | Manley Spring | Use Cutter Number |
|----------|----------|------------------|--------------|--------------|---------------|----------------------|-------------------|------------------------|-------------------|
| 42446-16 | 16 pcs. | 1.400" | 1.410" | .567" | .062" | .163" | .690" | 221446SF | 41850 |
| 42426-16 | 16 pcs. | 1.550" | 1.535" | .567" | .062" | .163" | .740" | 221432, 221441P | 41856 |
| 42466-16 | 16 pcs. | 1.550" | 1.535" | .567" | .045" | .163" | .740" | 221432, 221441P | 41856 |
| 42443-16 | 16 pcs. | 1.560" | 1.550" | .567" | .062" | .163" | .802" | 221442 | 41856 |
| 42573-16 | 16 pcs. | 1.580" | 1.570" | .567" | .062" | .163" | .828" | 221443 | 41856 |
| 42438-16 | 16 pcs. | 1.580" | 1.570" | .567" | .045" | .163" | .828" | 221443 | 41856 |
| 42437-16 | 16 pcs. | 1.625" | 1.570" | .567" | .062" | .163" | .850" | 221424, 221425, 221454 | 41857 |
| 42459-16 | 16 pcs. | 1.585" | 1.610" | .635" | .062" | .163" | .790" | 221463 | 41855 |

Please call with your custom spring locator requirements.

SPRING LOCATORS

I.D. VALVE SPRING LOCATORS

- ✓ CNC machined
- ✓ Accurate and durable
- ✓ Heat treated and black oxide finished



| Part No. | Quantity | Fits Spring O.D. | Locator O.D. | Locator I.D. | Cup Thickness | Wall Shoulder Height | Shoulder Diameter | Spring | Use Cutter Number |
|-----------------|----------|------------------|--------------|--------------|---------------|----------------------|-------------------|---|-------------------|
| 42460-16 | 16 pcs. | .870" | .845" | .555" | .057" | .100" | .600" | Manley 22160 Inner Spring | None |
| 42115-16 | 16 pcs. | 1.160" | 1.100" | .500" | .095" | .200" | .610" | Manley 22115 | None |
| 42123-16 | 16 pcs. | 1.255" | 1.250" | .780" | .180" | .090" | .880" | Manley 22411 | None |
| 42341-16 | 16 pcs. | 1.255" | 1.170" | .505" | .035" | .145" | .825" | Manley 221423 | None |
| 42334-16 | 16 pcs. | 1.290" | 1.270" | .505" | .035" | .145" | .675" | Manley 221436 | None |
| 42124-16 | 16 pcs. | 1.290" | 1.270" | .570" | .062" | .145" | .675" | Manley 221436 | 41850 |
| 42338-16 | 16 pcs. | 1.311" | 1.290" | .505" | .035" | .145" | .875" | Manley 221428, 221438 | None |
| 42336-16 | 16 pcs. | 1.311" | 1.290" | .505" | .062" | .145" | .875" | Manley 221428, 221438 | None |
| 42349-16 | 16 pcs. | 1.311" | 1.290" | .570" | .062" | .145" | .875" | Manley 221428, 221438 | 41850 |
| 42324-16 | 16 pcs. | 1.311" | 1.300" | .812" | .205" | .145" | .875" | Manley 221431 | None |
| 42348-16 | 16 pcs. | 1.340" | 1.320" | .505" | .035" | .145" | .715" | Manley 221435 | None |
| 42135-16 | 16 pcs. | 1.340" | 1.320" | .567" | .035" | .145" | .715" | Manley 221435 | None |
| 42335-16 | 16 pcs. | 1.550" | 1.535" | .635" | .062" | .140" | .710" | Manley 221455, 221456, 221457, 221460 | 41835 |
| 42347-16 | 16 pcs. | 1.550" | 1.535" | .570" | .062" | .140" | .710" | Manley 221455, 221456, 221457, 221460 | 41836 |
| 42119-16 | 16 pcs. | 1.550" | 1.535" | .635" | .062" | .140" | .720" | Manley 22430, 22431, 22440, Isky 9385 | 41835 |
| 42317-16 | 16 pcs. | 1.550" | 1.535" | .570" | .062" | .140" | .720" | Manley 22430, 22431, 22440 | 41856 |
| 42330-16 | 16 pcs. | 1.550" | 1.535" | .635" | .062" | .140" | .740" | Manley 221432, 221441P | 41835 |
| 42326-16 | 16 pcs. | 1.550" | 1.535" | .570" | .062" | .140" | .740" | Manley 221432, 221441P | 41856 |
| 42378-16 | 16 pcs. | 1.550" | 1.535" | .570" | .062" | .140" | .765" | Isky 9685 | 41856 |
| 42331-16 | 16 pcs. | 1.550" | 1.530" | .570" | .062" | .140" | .750" | Manley 221440P | 41856 |
| 42332-16 | 16 pcs. | 1.550" | 1.535" | .570" | .062" | .140" | .810" | Comp 943 | 41856 |
| 42333-16 | 16 pcs. | 1.550" | 1.535" | .635" | .062" | .140" | .810" | Comp 943 | 41835 |
| 42343-16 | 16 pcs. | 1.560" | 1.550" | .567" | .062" | .163" | .802" | Manley 221442 | 41856 |
| 42373-16 | 16 pcs. | 1.580" | 1.570" | .570" | .062" | .140" | .825" | Manley 221443 | 41856 |
| 42369-16 | 16 pcs. | 1.580" | 1.570" | .635" | .062" | .140" | .825" | Manley 221443 | 41856 |
| 42367-16 | 16 pcs. | 1.610" | 1.610" | .570" | .062" | .140" | .825" | Manley 221444 | 41857 |
| 42368-16 | 16 pcs. | 1.610" | 1.610" | .635" | .062" | .140" | .825" | Manley 221444 | 41855 |
| 42342-16 | 16 pcs. | 1.620" | 1.610" | .570" | .062" | .140" | .840" | Manley 221445P | 41857 |
| 42337-16 | 16 pcs. | 1.625" | 1.570" | .570" | .062" | .140" | .850" | Manley 221424, 221425, 221454 | 41857 |
| 42120-16 | 16 pcs. | 1.625" | 1.610" | .635" | .062" | .140" | .710" | Manley 221455, 56, 57, 60 K Motion K1000, K1000H | 41855 |
| 42318-16 | 16 pcs. | 1.625" | 1.610" | .570" | .062" | .140" | .710" | Manley 221455, 56, 57, 60 K Motion K1000, K1000H | 41857 |
| 42374-16 | 16 pcs. | 1.625" | 1.610" | .570" | .062" | .140" | .765" | Comp 26099 | 41857 |
| 42376-16 | 16 pcs. | 1.625" | 1.615" | .570" | .062" | .140" | .675" | Crane 99877 | 41857 |
| 42375-16 | 16 pcs. | 1.625" | 1.625" | .635" | .062" | .140" | .760" | Isky 9685 | 41855 |
| 42364-16 | 16 pcs. | 1.677" | 1.660" | .570" | .062" | .140" | .630" | Manley 221447, 221448, 221449, 221450 | 41858 |

Please call with your custom spring locator requirements.

Note: New part numbers are *ITALICIZED*.

TOOLS / CUTTERS

CYL HEAD COMPONENTS

ROCKER STUD BOSS CUTTERS

- ✓ Extra large diameter cutter to completely clean stud bosses while reducing height
- ✓ Due to the severe use to which these cutters are subjected, we are not able to warranty damaged goods



| Part No. | Quantity | Description |
|----------|----------|--------------------------------------|
| 41860 | 1 | Use for Fords and Small Block Chevys |

CYLINDER HEAD SPRING SEAT CUTTERS

- ✓ Extra strength carbide cutters
- ✓ Due to the severe use to which these cutters are subjected, we are not able to warranty damaged goods

Replacement pilots: 7 mm/.274" - 41274, 5/16" - 41516, 11/32" - 41132, 3/8" - 41138

| Part No. | Quantity | Description |
|----------|----------|--|
| 41824 | 1 | Cuts 1.250" O.D., .750" I.D. with 11/32" pilot |
| 41850 | 1 | Cuts 1.445" O.D., .570" I.D. with 11/32" pilot |
| 41835 | 1 | Cuts 1.565" O.D., .625" I.D. with 11/32" pilot |
| 41856 | 1 | Cuts 1.580" O.D., .570" I.D. with 11/32" pilot |
| 41857 | 1 | Cuts 1.635" O.D., .570" I.D. with 11/32" pilot |
| 41855 | 1 | Cuts 1.635" O.D., .625" I.D. with 11/32" pilot |
| 41858 | 1 | Cuts 1.690" O.D., .570" I.D. with 11/32" pilot |
| 41852 | 1 | Cuts 1.690" O.D., .625" I.D. with 11/32" pilot |
| 41859 | 1 | Cuts 1.755" O.D., .570" I.D. with 11/32" pilot |
| 41851 | 1 | Cuts 1.755" O.D., .625" I.D. with 11/32" pilot |



VALVE GUIDE SEAL CUTTERS

- ✓ Extra strength carbide cutters
- ✓ Due to the severe use to which these cutters are subjected, we are not able to warranty damaged goods

| Part No. | Quantity | Pilot Size | Seal No. | Guide O.D. |
|----------|----------|----------------|----------|------------|
| 41410 | 1 | 7 mm (.274") | 24041 | .431" |
| 41510 | 1 | 5/16" | 24040 | .420" |
| 41610 | 1 | 5/16" | 24029 | .500" |
| 41710 | 1 | 5/16" | 24034 | .530" |
| 41611 | 1 | 11/32" | 24037 | .500" |
| 41711 | 1 | 11/32" | 24035 | .530" |
| 41612 | 1 | 3/8" | 24039 | .500" |
| 41712 | 1 | 3/8" | 24036 | .530" |



VALVE GUIDE SEAL CUTTER PILOT

- ✓ For use with any spring seat or seal cutter

| Part No. | Quantity | Description |
|----------|----------|---------------------|
| 41274 | 1 | 7 mm cutter pilot |
| 41516 | 1 | 5/16" cutter pilot |
| 41132 | 1 | 11/32" cutter pilot |
| 41138 | 1 | 3/8" cutter pilot |

