

**READ ALL INSTRUCTIONS COMPLETELY AND THOROUGHLY UNDERSTAND THEM BEFORE DOING ANYTHING.
CALL TOTAL CONTROL PRODUCTS TECH SUPPORT (916) 388-0288 IF YOU NEED ASSISTANCE.**

INSTALLATION GUIDE



TCP PSP-FD Power Steering Pump Kit



DESCRIPTION:

Document includes instructions and illustrations for billet aluminum pump mounting brackets; spacer set; hose kits, reservoirs, and hardware.

PUMP BRACKET INSTRUCTIONS

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PUMP BRACKET SET - TCP PBS-FD-01

Ford Small Block (Short Deck) 260, 289, 302 Windsor



PARTS LIST

TCP PBS-FD-01 - Power Steering Pump Bracket Set - Small Block Ford (Short Deck)

Qty	Part Number	Description
1	7900-148	Pump Bracket SB Ford 260/289/302 Short Deck Block
1	7918-009	Hardware Bag for TCP PBS-FD-01
1	7918-012	Spacer Set Ford Power Steering Pump Bracket

7918-009 - Hardware Bag

Qty	Part Number	Description
2	3100-031C2.75Y	Bolt 5/16-18 x 2-3/4" Hex Head Cap Screw
2	3100-031C3.50Y	Bolt 5/16-18 x 3-1/2" Hex Head Cap Screw
2	3100-038C4.25Y	Bolt 3/8-16 x 4-1/4" Hex Head Cap Screw
1	3100-038C4.50Y	Bolt 3/8-16 x 4-1/2" Hex Head Cap Screw
2	3100-044C4.00Y	Bolt 7/16-14 x 4" Hex Head Cap Screw
1	3100-044C4.50Y	Bolt 7/16-14 x 4-1/2" Hex Head Cap Screw
1	3119-031-18C	Flange Nut 5/16-18
2	3120-031S-Y	Washer 5/16 Flat SAE .345 x .690 x .060 Thick
3	3120-038S-Y	Washer 3/8 Flat SAE .410 x .810 x .060 Thick
2	3120-044S-Y	Washer 7/16 Flat SAE .470 x .925 x .060 Thick

7918-012 - Hardware Bag, Spacer Set

6	3109-044S1-S	Aircraft Washer 7/16 Flat .453 x .750 x .032 Thick
6	3109-044S2-S	Aircraft Washer 7/16 Flat .453 x .750 x .063 Thick
3	7900-170-0370	Spacer .453 ID x .370 Long x .75 OD with .850 Shoulder
3	7900-170-2910	Spacer .453 ID x 2.910 Long x .75 OD with .850 Shoulder

INSTRUCTIONS

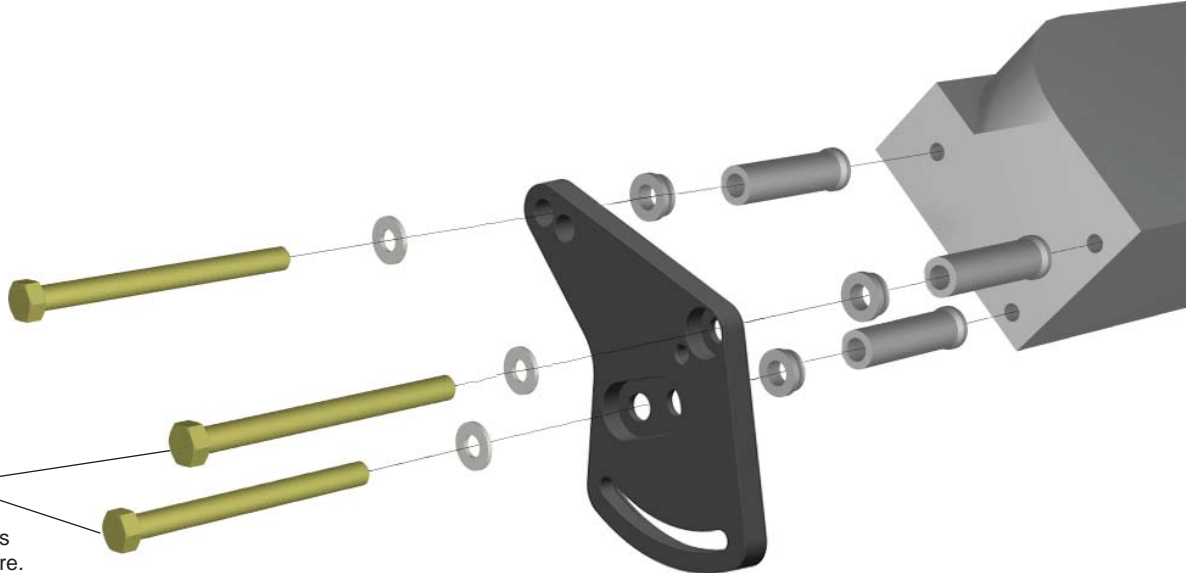
1. Bolt bracket to cylinder head using the supplied 3/8" or 7/16" hardware. If additional accessories are mounting to cylinder head, spacers will need to be shortened. Bolts do not need to be tightened at this time.



3/8-16 x 4-1/2" or
7/16-14 x 4-1/2"

3/8-16 x 4-1/4"
or 7/16-14 x 4"

NOTE: 7/16" washer is
not used in counterbore.

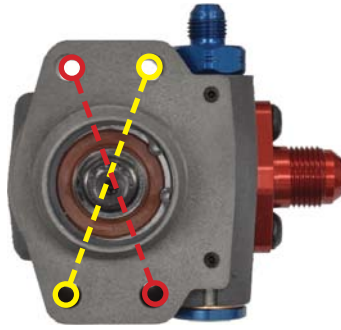


2. Attach pump to bracket using 5/16" hardware. Hardware can be inserted through pulley. See following page for pump specific hardware illustrations.



Pro Pump

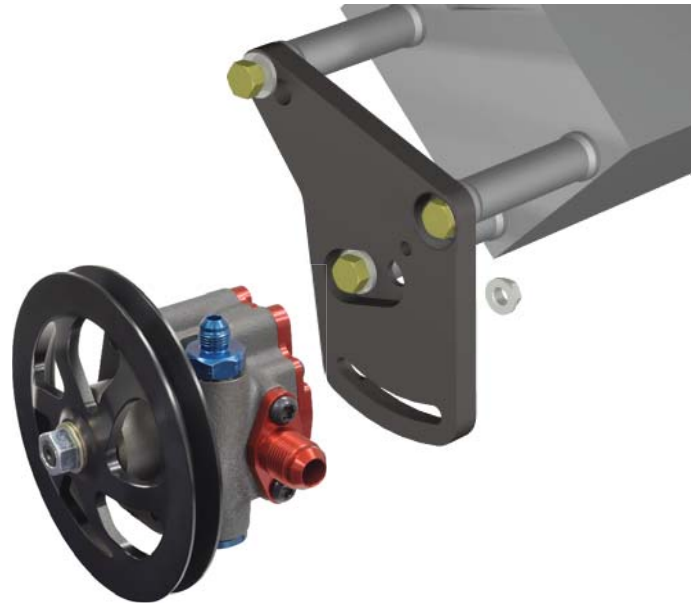
Use 3-1/2" long 5/16" bolts at opposite mounting holes; red or yellow pair. Each hole pair changes the final angle of the pump slightly with the belt fully tensioned.



5/16-18 x 3-1/2"

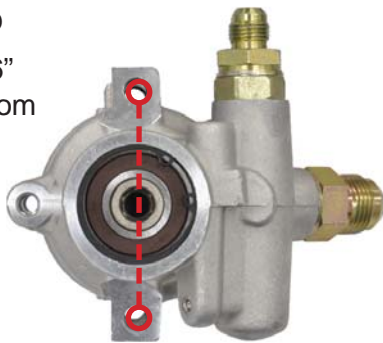


5/16-18 x 3-1/2"



Sportsman Pump

Use 2-3/4" long 5/16" bolts at top and bottom mounting holes.



5/16-18 x 2-3/4"



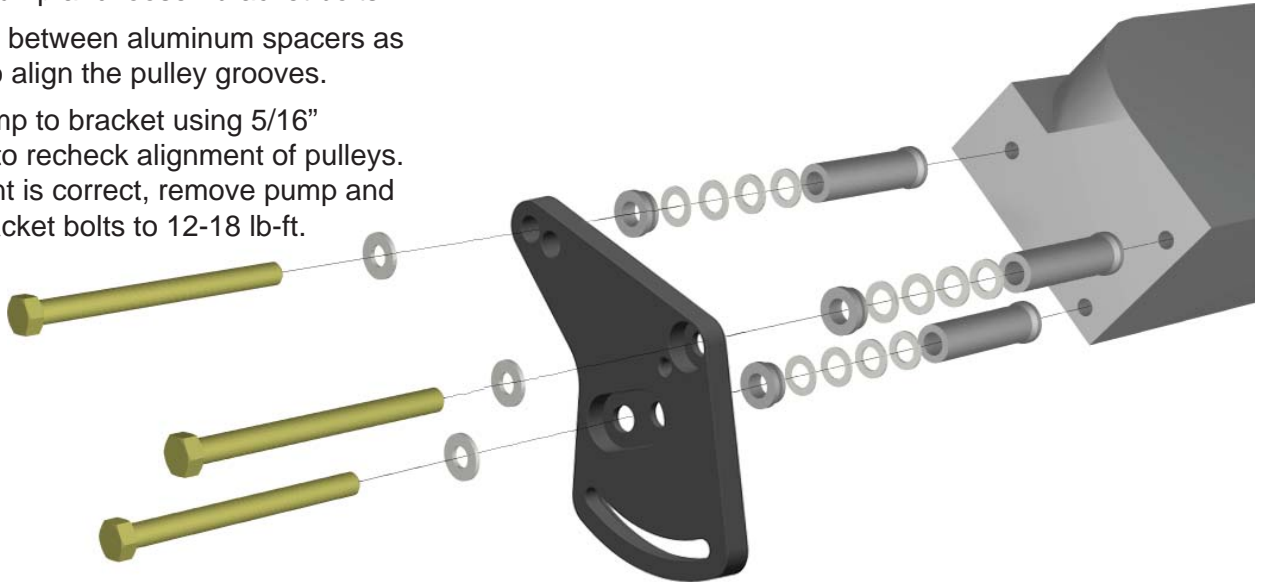
5/16-18 x 2-3/4"



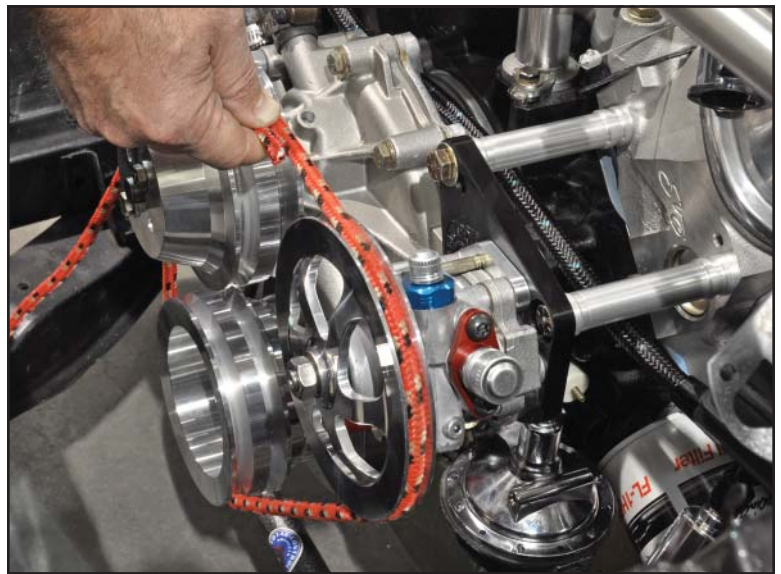
3. Use a straight edge along face of pulleys to measure correct amount to shim bracket for alignment.



4. Remove pump and loosen bracket bolts.
5. Add shims between aluminum spacers as required to align the pulley grooves.
6. Attach pump to bracket using 5/16" hardware to recheck alignment of pulleys. If alignment is correct, remove pump and tighten bracket bolts to 12-18 lb-ft.



7. Attach pump to bracket using 5/16" hardware.
8. Upper bolt is the pivot bolt and should be installed 'finger-tight' while measuring belt length.
9. A rope can be used to establish a starting point for finding the correct length belt for use with your particular pulley combination.



10. Insert the flanged nut into the tensioning slot on the backside of the bracket. The flanged part of the nut must lie against the bracket.
11. The lower 5/16" bolt goes inserts through the pulley and lower pump mounting hole and into the flange nut.
12. Tighten both bolts to 12-18 ft-lb., while holding tension on the belt.
13. See Hose Kit instructions for hose assembly, routing and hook-up.



PUMP BRACKET SET - TCP PBS-FD-02

Ford Small Block (Tall Deck) 351 Windsor, 351 Cleveland & 400M

PARTS LIST

TCP PBS-FD-02 - Power Steering Pump Bracket Set - Small Block Ford (Tall Deck)

Qty	Part Number	Description
1	7900-149	Pump Bracket SB Ford 351W/351C/400 Tall Deck Block
1	7918-009	Hardware Bag for TCP PBS-FD-02
1	7918-012	Spacer Set Ford Power Steering Pump Bracket

7918-009 - Hardware Bag

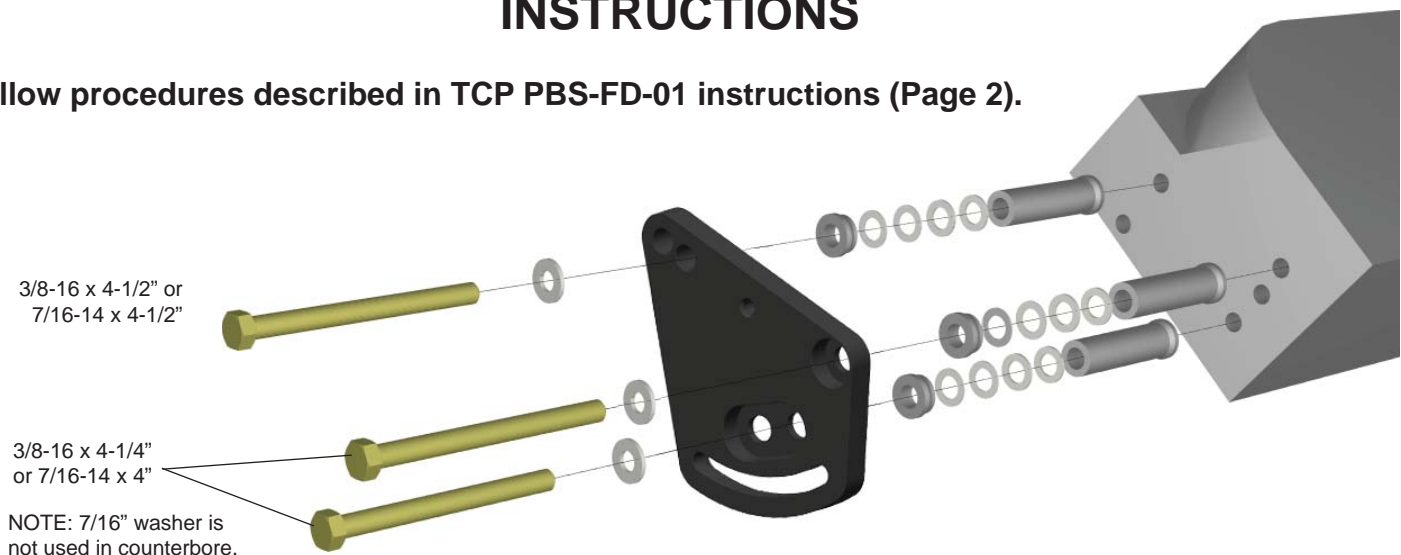
Qty	Part Number	Description
2	3100-031C2.75Y	Bolt 5/16-18 x 2-3/4" Hex Head Cap Screw
2	3100-031C3.50Y	Bolt 5/16-18 x 3-1/2" Hex Head Cap Screw
2	3100-038C4.25Y	Bolt 3/8-16 x 4-1/4" Hex Head Cap Screw
1	3100-038C4.50Y	Bolt 3/8-16 x 4-1/2" Hex Head Cap Screw
2	3100-044C4.00Y	Bolt 7/16-14 x 4" Hex Head Cap Screw
1	3100-044C4.50Y	Bolt 7/16-14 x 4-1/2" Hex Head Cap Screw
1	3119-031-18C	Flange Nut 5/16-18
2	3120-031S-Y	Washer 5/16 Flat SAE .345 x .690 x .060 Thick
3	3120-038S-Y	Washer 3/8 Flat SAE .410 x .810 x .060 Thick
2	3120-044S-Y	Washer 7/16 Flat SAE .470 x .925 x .060 Thick

7918-012 - Hardware Bag, Spacer Set

6	3109-044S1-S	Aircraft Washer 7/16 Flat .453 x .750 x .032 Thick
6	3109-044S2-S	Aircraft Washer 7/16 Flat .453 x .750 x .063 Thick
3	7900-170-0370	Spacer .453 ID x .370 Long x .75 OD with .850 Shoulder
3	7900-170-2910	Spacer .453 ID x 2.910 Long x .75 OD with .850 Shoulder

INSTRUCTIONS

Follow procedures described in TCP PBS-FD-01 instructions (Page 2).



PUMP BRACKET SET - TCP PBS-FD-03

Ford FE Block 390, 427 & 428

PARTS LIST

TCP PBS-FD-03 - Power Steering Pump Bracket Set - Ford FE

Qty	Part Number	Description
1	7900-146	KRC Pump Bracket FE Ford Block 390-427-428
1	7918-010	Hardware Bag for TCP PBS-FD-03
1	7918-012	Spacer Set Ford Power Steering Pump Bracket

7918-010 - Hardware Bag

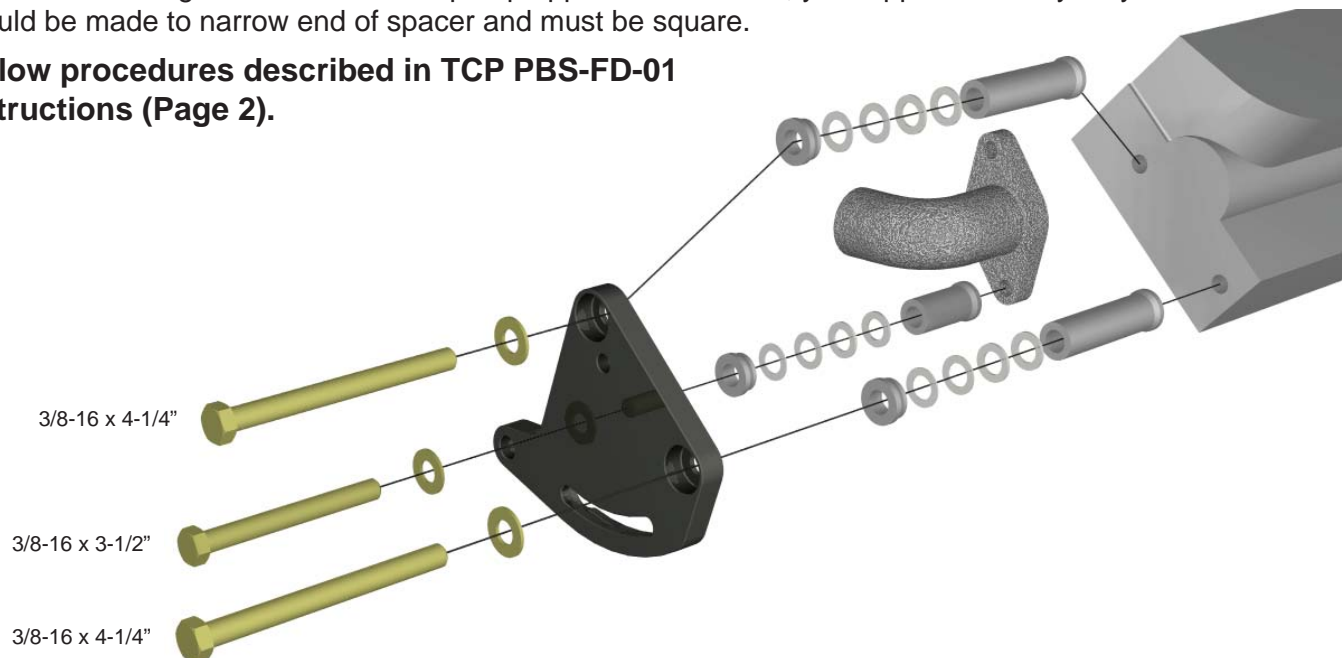
Qty	Part Number	Description
2	3100-031C2.75Y	Bolt 5/16-18 x 2-3/4" Hex Head Cap Screw
2	3100-031C3.50Y	Bolt 5/16-18 x 3-1/2" Hex Head Cap Screw
1	3100-038C3.50Y	Bolt 3/8-16 x 3-1/2" Hex Head Cap Screw
2	3100-038C4.25Y	Bolt 3/8-16 x 4-1/4" Hex Head Cap Screw
1	3119-031-18C	Flange Nut 5/16-18; 1/2 Hex
2	3120-031S-Y	Washer 5/16 Flat SAE .345 x .690 x .060 Thick
3	3120-038S-Y	Washer 3/8 Flat SAE .410 x .810 x .060 Thick

7918-012 - Hardware Bag, Spacer Set

6	3109-044S1-S	Aircraft Washer 7/16 Flat .453 x .750 x .032 Thick
6	3109-044S2-S	Aircraft Washer 7/16 Flat .453 x .750 x .063 Thick
3	7900-170-0370	Spacer .453 ID x .370 Long x .75 OD with .850 Shoulder
3	7900-170-2910	Spacer .453 ID x 2.910 Long x .75 OD with .850 Shoulder

INSTRUCTIONS

- Bolt bracket to cylinder head using the supplied 3/8" hardware. The spacer for the water pump bolt will need to be cut for a correct fit due to variations in castings from different manufacturers.
 - The correct length for a stock water pump application is 1-5/8", your application may vary. Cut should be made to narrow end of spacer and must be square.
- Follow procedures described in TCP PBS-FD-01 instructions (Page 2).



TCP PBS-UNIV

Pump Bracket Set Universal



DESCRIPTION:

Pump bracket set universal - includes; 6x6 square billet aluminum bracket with pump mounting holes, spacer & hardware. Attaches power steering pump to applications on which a direct bolt-on bracket is not available. **Customer must machine to fit.**

PARTS LIST

TCP PBS-UNIV - Power Steering Pump Bracket Set - Universal

Qty	Part Number	Description
1	7900-150	Mounting Bracket Universal, 6 x 6
1	7918-012	Spacer Set Ford Power Steering Pump Bracket

7918-068 - Hardware Bag

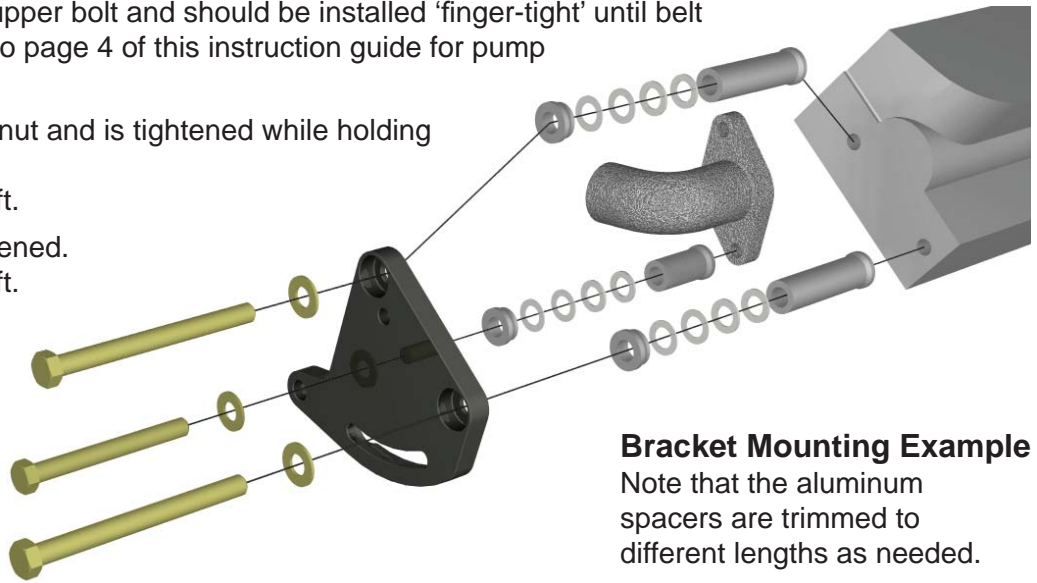
Qty	Part Number	Description
2	3100-031C2.75Y	Bolt 5/16-18 x 2-3/4" Hex Head Cap Screw
2	3100-031C3.50Y	Bolt 5/16-18 x 3-1/2" Hex Head Cap Screw
1	3119-031-18C	Flange Nut 5/16-18
2	3120-031S-Y	Washer 5/16 Flat SAE .345 x .690 x .060 Thick

7918-012 - Hardware Bag, Spacer Set

6	3109-044S1-S	Aircraft Washer 7/16 Flat .453 x .750 x .032 Thick
6	3109-044S2-S	Aircraft Washer 7/16 Flat .453 x .750 x .063 Thick
3	7900-170-0370	Spacer .453 ID x .370 Long x .75 OD with .850 Shoulder
3	7900-170-2910	Spacer .453 ID x 2.910 Long x .75 OD with .850 Shoulder

INFORMATION

- We recommend securing the bracket to vehicle with a minimum of three mounting bolts.
 - Determine a bolt pattern based upon available mounting locations.
 - Check for adequate pump and hose clearance when choosing a location.
 - Some bolts may need to be positioned underneath the mounting surface of the pump. A counter bore is required in these situations. Counter bore depth should not exceed .375"
1. Spacers will need to be modified to fit your particular application.
 - a) Use a straight edge along face of pulleys to measure correct amount to shorten spacers.
 2. Shims are included for use between aluminum spacers as required.
 3. Bracket must be oriented so that opening for flange nut is on opposite side of bracket from pump.
 - a) Flanged end of nut will be closest to pump.
 - b) Refer to illustration to right.
 4. Orient slot so that pump can be rotated away from driving pulley to allow greatest range of adjustment.
 5. The pump will pivot on the upper bolt and should be installed 'finger-tight' until belt has been tensioned. Refer to page 4 of this instruction guide for pump specific hardware.
 6. Lower bolt goes into flange nut and is tightened while holding tension on belt.
 - a) Torque bolt to 12-18 lb. ft.
 7. Upper bolt can now be tightened.
 - a) Torque bolt to 12-18 lb. ft.
 8. See Hose Kit instructions for hose assembly, routing and hook-up.

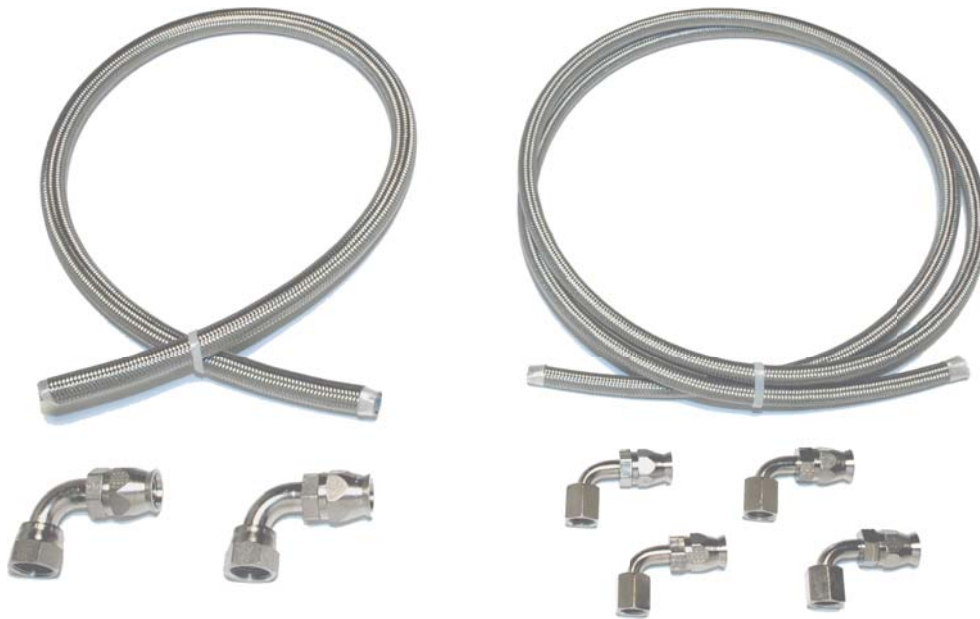


Bracket Mounting Example

Note that the aluminum spacers are trimmed to different lengths as needed.

TCP HOSE-02

Braided Stainless Hose Kit, Remote Reservoir (Street or Pro Pump)



Description: TCP hose kit braided style. Contains #6 & #10 stainless braided exterior bulk hose lengths and required plated steel hose ends to connect power rack & pinion, KRC power steering pump and remote reservoir.

Applications: Fits applications using TCP power rack and pinion with TCP power steering pump.

IMPORTANT: Use ONLY petroleum based power steering fluid with this product. Use of ATF or synthetic fluids will result in damage to the internal seals.

PARTS LIST

TCP HOSE-02 - Braided Stainless Hose Kit, Remote Reservoir (Street or Pro Pump)

Qty	Part Number	Description
4	3216-T-109106S	Hose End, 90 deg. #6 AN/JIC 37 deg. Flare Steel Silver Finish
2	3216-T-109110S	Hose End, 90 deg. #10 AN/JIC 37 deg. Flare Steel Silver Finish
1	3216-T-30006-6	Hose, #6 High Pressure 2500 psi; 72" Long Stainless Braided
1	3216-T-30010-3	Hose, #10 High Pressure 2500 psi; 36" Long Stainless Braided

INSTRUCTIONS

Installing the Reservoir

1. The reservoir must be mounted in close proximity to the pump (i.e. inner fender, radiator support, or shock tower).
2. The hidden plug inside the billet clamp pushes against the reservoir body so the clamp can be tightened anywhere along the length of the reservoir.



3. Slide the clamp assembly over the reservoir and tighten the allen head cap screws from the back side of the clamp. Test fit the reservoir to make sure the fittings are correctly clocked and easily accessible before fully tightening the clamp.



4. Next attach the 14 degree adapter, TCP PSR-01, to the billet clamp assembly with the socket-head cap screws provided.



5. Position the reservoir on the inner fender, so when filled the fluid level is at least 2 inches above the top of the pump.
6. Once positioned correctly, mark the location of the adapter bracket.



7. Use a ruler to measure the location of the two mounting holes in the adapter. The front hole is $15/16$ " back from the front edge of the adapter, and the rear hole is $2-15/16$ " back from the same front edge.



8. Check the area behind the hole locations prior to drilling. Make sure the locations are clear of wiring and are accessible for hardware installation.
9. Use a $5/16$ " bit to drill mounting holes in the inner fender. In some cases the forward hole will be inside the headlight bucket area.



10. Secure the reservoir to the inner fender with the 5/16-18 x 1/2" button heads and flat washers supplied with the adapter.

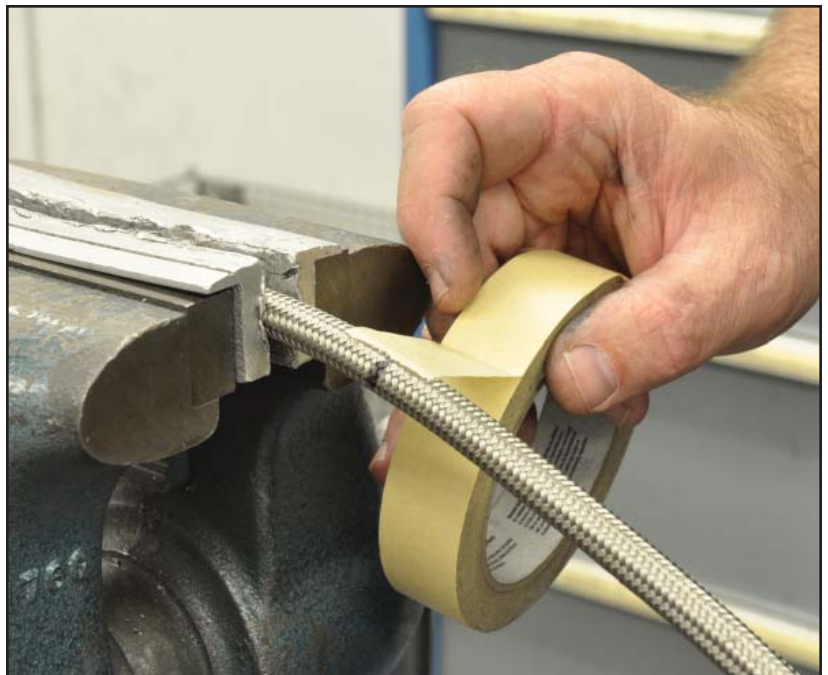


11. The reservoir is now installed.



Assembling the Hoses

12. If the end of the hose is frayed, it will need to be taped and cut to have both ends of the hose straight and usable.
13. Wrap the hose with tape centered on the marked cut line.



14. Cut hoses square with fine-tooth hacksaw or cut-off wheel.
15. Burrs along the inside edge of the Teflon hose can be removed with a razor.



16. Clean inside of hoses thoroughly. Small metal and Teflon particles will damage the pump.
17. Use a rifle bore brush, water, and compressed air to remove loose particles and dry each hose.



18. Disassemble the hose ends and slide the outer socket onto the hose with the threaded end of socket closest to the freshly cut end of the hose.

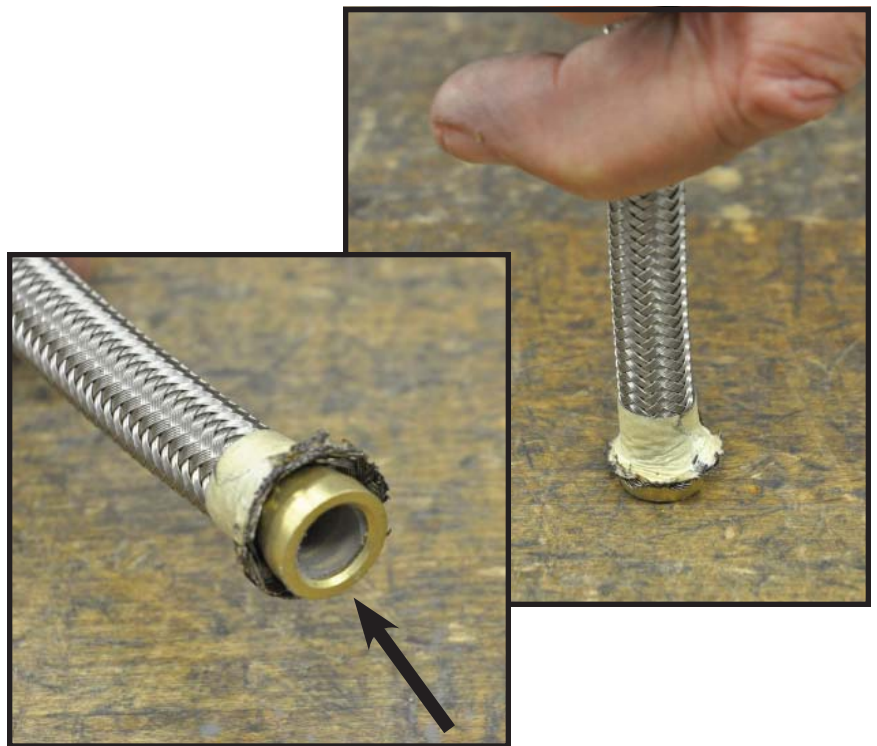


19. Place the brass ferrule in between the Teflon hose and steel braid as shown.



20. Apply pressure against the ferrule until the Teflon hose is seated against the inside lip of the ferrule.

21. The Teflon should be tight against the brass ferrule.



22. Apply “moly” assembly lubricant or petroleum based lubricant to the threads of the outer socket and elbow.

23. Insert the nipple end of the fitting through the ferrule and into the Teflon hose.



24. Remove tape.

25. Slide outer socket into position and thread onto elbow portion of hose end.



26. A vise can be used to hold the outer socket while tightening the fitting with a wrench.

27. Leave a .031" gap between the socket and elbow. Tighten further to align outer hexes of hose end.



28. The fitting is assembled and we have lined up the tube of the fitting to a index mark. This is an important step because the fitting can not be rotated once they are tight.



29. Refer to pages 12 and 13 for additional information on hose routing, filling the reservoir, and managing pump speed.

TCP HOSE-03

Hose Support Bracket



HOSE-03 - Hoses Support Bracket Kit

Qty	Part Number	Description
1	3101-019-32S	Locknut 10/32 stainless steel
1	3105-019F0.75S	Flat head 10-32 x 3/4" cap screw
1	3157-019S-S	#10 flat washer stainless steel
2	3475-07-C	Clamp 7/16" tube (use with TCP-HOSE-02, stainless steel)
2	3475-11-C	Clamp 11/16" tube (use with TCP-HOSE-01, blue)
1	7900-278	Hose bracket power steering

The bracket attaches to the motor mount bolt and supports the power steering hose as they run along the oil pan. Use the smaller clamp for the stainless steel hoses and the larger for the blue hoses.



TCP HOSE-04

Braided Stainless Hose Kit, Integral Reservoir (Pro Pump)



Description: TCP hose kit braided style. Contains #6 stainless braided exterior bulk hose lengths and required plated steel hose ends to connect power rack & pinion and integral reservoir power steering pump.

Applications: Fits applications using TCP power rack and pinion with TCP power steering pump.

IMPORTANT: Use ONLY petroleum based power steering fluid with this product. Use of ATF or synthetic fluids will result in damage to the internal seals.

PARTS LIST

TCP HOSE-04 - Braided Stainless Hose Kit, Integral Reservoir (Pro Pump)

Qty	Part Number	Description
4	3216-T-109106S	Hose End, 90 deg. #6 AN/JIC 37 deg. Flare Steel Silver Finish
1	3216-T-30006-6	Hose, #6 High Pressure 2500 psi; 72" Long Stainless Braided

INSTRUCTIONS

1. Refer to TCP HOSE-02, beginning on page 14, for hose assembly instructions.
2. Refer to pages 12 and 13 for additional information on hose routing, filling the reservoir, and managing pump speed.

NOTES:

WARRANTY NOTICE:

There are NO WARRANTIES, either expressed or implied. Neither the seller nor manufacturer will be liable for any loss, damage or injury, direct or indirect, arising from the use or inability to determine the appropriate use of any products. Before any attempt at installation, all drawings and/or instruction sheets should be completely reviewed to determine the suitability of the product for its intended use. In this connection, the user assumes all responsibility and risk. We reserve the right to change specification without notice. Further, Chris Alston's Chassisworks, Inc., makes **NO GUARANTEE** in reference to any specific class legality of any component. **ALL PRODUCTS ARE INTENDED FOR RACING AND OFF-ROAD USE AND MAY NOT BE LEGALLY USED ON THE HIGHWAY.** The products offered for sale are true race-car components and, in all cases, require some fabrication skill. **NO PRODUCT OR SERVICE IS DESIGNED OR INTENDED TO PREVENT INJURY OR DEATH.**

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