



# Type CF Power Steering Rack

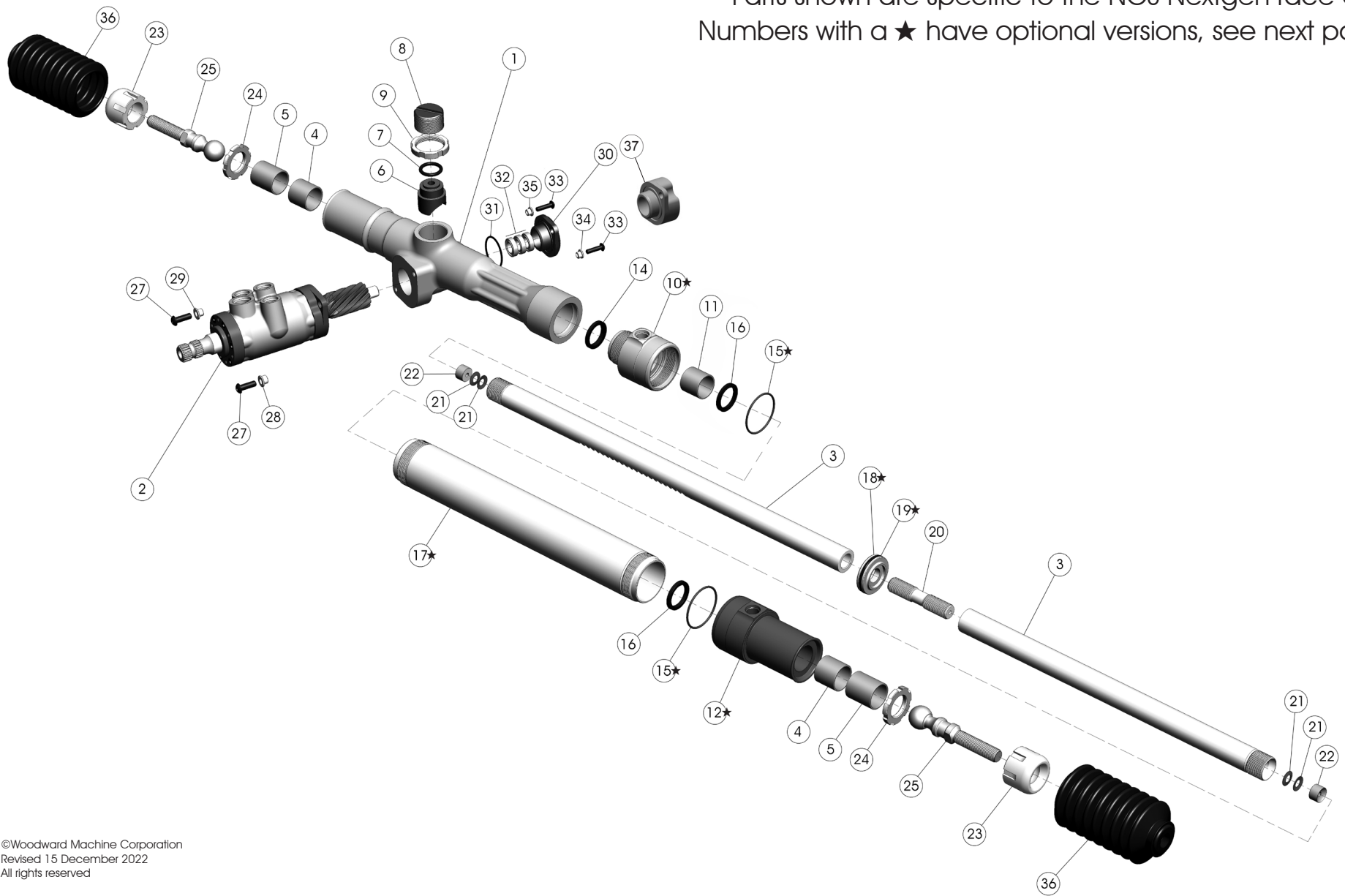
Illustrated parts breakdowns  
specific to the Nextgen race car

**CF rack exploded view and parts list**  
**CF servo exploded view and parts list**

# Type CF Power Steering Rack

## Illustrated Parts Breakdown

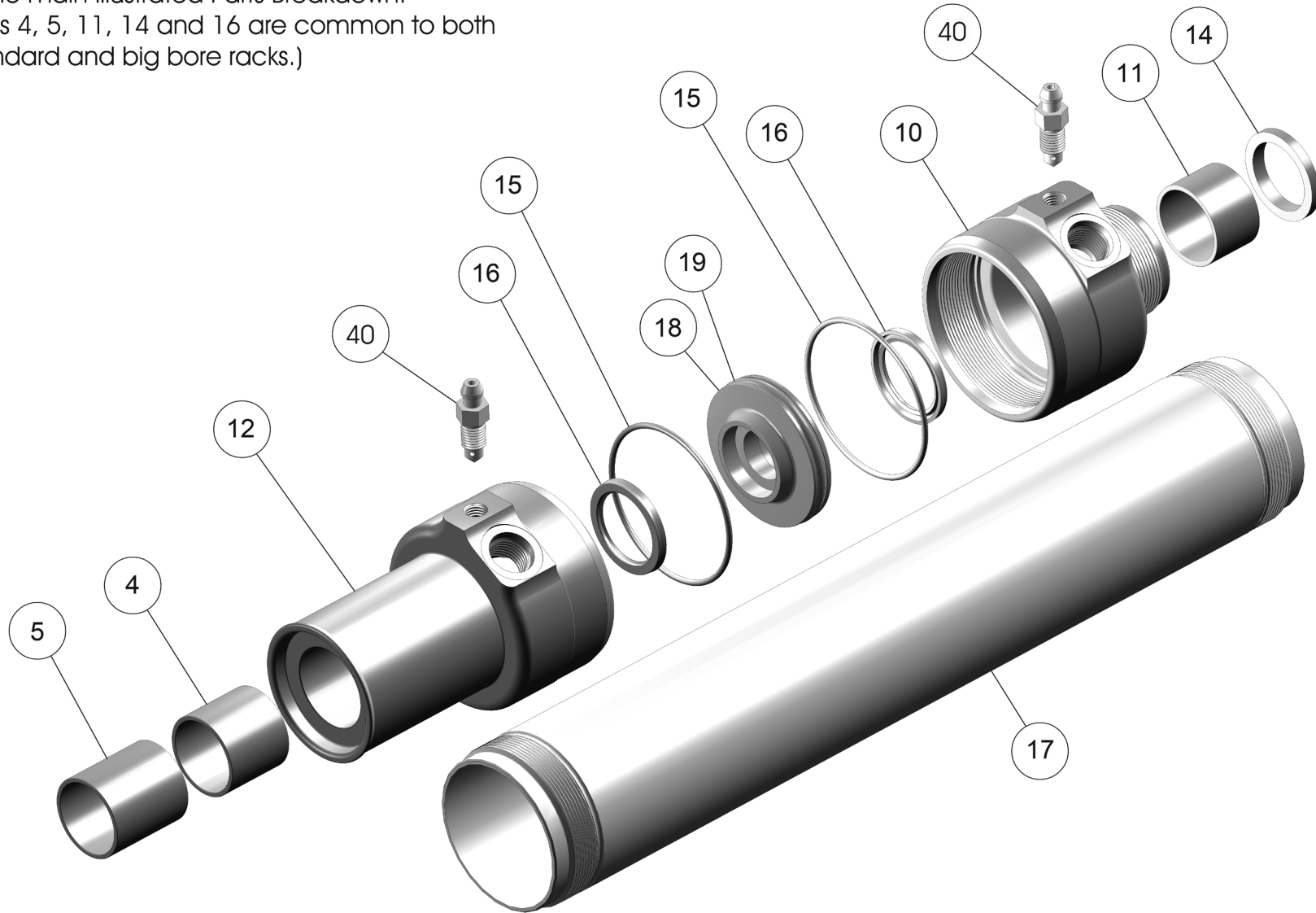
Parts shown are specific to the NCS Nextgen race car.  
Numbers with a ★ have optional versions, see next page



# Big Bore Kit

(The locating numbers are the same as for the parts in the main Illustrated Parts Breakdown.

Parts 4, 5, 11, 14 and 16 are common to both standard and big bore racks.)



## Nextgen RACK Parts List

Dwg no.	Part numbers	Description	Dwg no.	Part numbers	Description
1	CF20EXN-100-157	HOUSING for 1.57 gearset	17	CF160XN	Cylinder tube, 1.75 bore ..... \$183.80
	CF20EXN-100-209	HOUSING for 2.09 gearset	17*	CF160XXN	Cylinder tube, 2.00 bore ..... \$207.24
	CF20EXN-100-262	HOUSING for 2.62 gearset			
	CF20EXN-100-314	HOUSING for 3.14 gearset.....	18	CF171XN	Piston, 1.75 bore..... \$44.34
		\$715.05	18*	CF171XXN	Piston, 2.00 bore..... \$49.70
2	CF950-2C-X-XXX	SERVO/PINION SUBASSEMBLY (280 possible P/Ns)	19	CF172XN	Piston O-ring for 1.75 bore ..... \$2.40
	CF950-2-X-XXX		19*	CF172XXN	Piston O-ring for 2.00 bore ..... \$2.78
	CF950-1-X-XXX	(4 basic valve profiles: 50-2C, 50-2, 50-1 and 55)			
	CF955-X-XXX	"X" calls out number of teeth on pinion (6T for 1.57 gearset, 8T for 2.09 gearset, etc.)	20	CF250	Rack stud..... \$37.68
		"XXX" calls out installed torsion bar diameter (.180, .185, .190, .195, .200, .205, .210, .215, .220, .225, .230, .235, .240, .245, .250, .255, .260, .265, .270) all.....	21	CF403	Belleville spring .022 thick ..... \$2.23
		\$1087.42		CF404	Belleville spring .032 thick ..... \$2.28
			22	CF405	Bronze preloader ..... \$30.40
			23	CF410	Monoball adjuster ..... \$54.37
3	CF221N-157	RACKSHAFT for 1.57 gearset	24	CF411	Monoball lock nut..... \$10.10
	CF221N-209	RACKSHAFT for 2.09 gearset	25	CF412N	Ball stud, 5/8-18..... \$86.20
	CF221N-262	RACKSHAFT for 2.62 gearset			
	CF221N-314	RACKSHAFT for 3.14 gearset.....	27	CF149	Torx® Button Head Screw, 1/4-20 x 3/4L, IP27 drive (2 req). \$ .69
		\$1040.00	28	CF155A	Eccentric bushing for 1/4 screw..... \$20.69
4	CF101NA	Inner rack bushing (2 req) .....	29	CF155B	Concentric bushing for 1/4 screw ..... \$11.67
5	CF101NB	Outer rack bushing (2 req).....			
		\$11.08	30	CF154	Pinion bearing flange..... \$73.05
6	CF102	Snubber.....	37	CF154S	Flange mount for steering angle sensor* ..... \$263.10
7	CF103	Snubber O-ring.....			*the CF154SA option includes a driver on the pinion; see Servo Parts List
8	CF104	Snubber adjusting screw .....	31	CF152	Flange O-ring..... \$1.75
9	CF105	Snubber lock nut.....			
		\$10.13	32	CF331	Pinion radial ball bearing (set of 3)..... \$33.99
10	CF151XN	Cylinder adapter for 1.75 bore.....	33	CF148	Torx® Button Head Screw, #10-24 x 3/4L, IP25 drive (2)..... \$ .43
10*	CF151XXN	Cylinder adapter for 2.00 bore.....	34	CF156A	Eccentric bushing (major) for #10 screw ..... \$20.21
		298.92	35	CF156B	Eccentric bushing (minor) for #10 screw ..... \$20.21
11	CF101NC	Middle rack bushing.....	36	CF360N	Rack boot..... \$17.88
		\$7.77	40	V312	Bleeder with internal check valve ..... \$12.98
12	CF151BXN	Cylinder end housing for 1.75 bore .....			
12*	CF151BXXN	Cylinder end housing for 2.00 bore .....			
		\$224.91			
		\$360.81			
14	CF157	Grease wiper .....			
		\$8.00			
15	CF158X	O-ring for CF151XN and CF151BXN (2 req).....			
15*	CF158XX	O-ring for CF151XXN and CF151BXXN (2 req)....			
		\$1.83			
		\$2.27			
16	CF159	High pressure lip seal (2 req) .....			
		\$17.10			

### BOM for SEAL replacement (parts shown in RED) total

CFRSR -1.75 bore rack ..... \$51.30

CFBBSR -2.00 bore rack ..... \$53.58

### BOM for BUSHING replacement (parts shown in BLUE) total

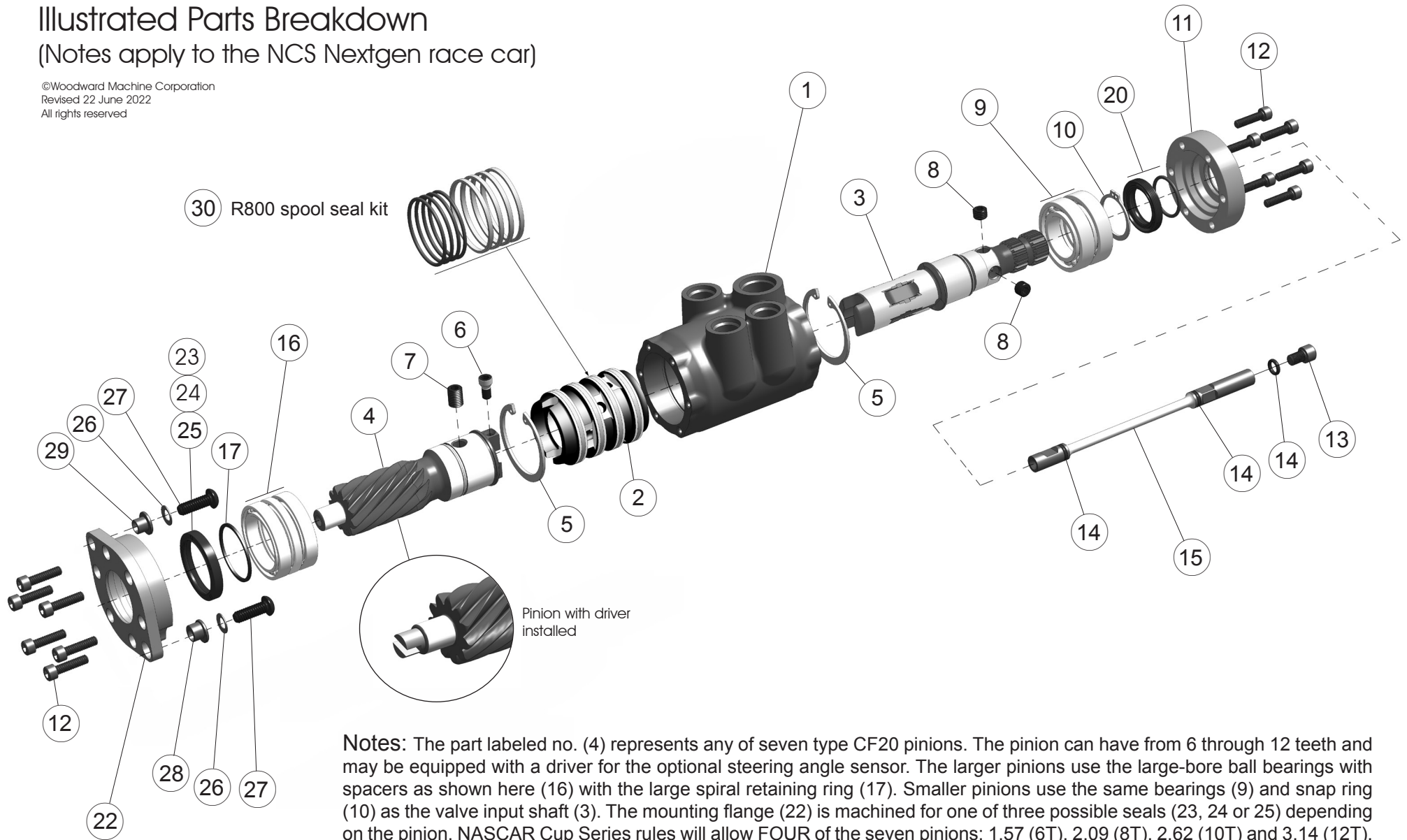
CFSRBR..... \$53.20

# Type CF servo/pinion subassembly

## Illustrated Parts Breakdown

(Notes apply to the NCS Nextgen race car)

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**Notes:** The part labeled no. (4) represents any of seven type CF20 pinions. The pinion can have from 6 through 12 teeth and may be equipped with a driver for the optional steering angle sensor. The larger pinions use the large-bore ball bearings with spacers as shown here (16) with the large spiral retaining ring (17). Smaller pinions use the same bearings (9) and snap ring (10) as the valve input shaft (3). The mounting flange (22) is machined for one of three possible seals (23, 24 or 25) depending on the pinion. NASCAR Cup Series rules will allow FOUR of the seven pinions: 1.57 (6T), 2.09 (8T), 2.62 (10T) and 3.14 (12T).

The servo is an interchangeable subassembly which can be tested, serviced, and rebuilt independently of the rack. However, its pinion is part of the mechanical gearset of the rack, which is a fixed combination. This means that while *any CF pinion can be installed in a given servo*, a servo with, for example, an 8-tooth pinion cannot be installed in a rack made for a 10-tooth pinion.

## Nextgen SERVO Parts List

Dwg no.	Part numbers	Description	Dwg no.	Part numbers	Description
1	CF900	HOUSING .....\$184.60	15	TB180-CF	Torsion bar .180 Ø
2	V601	SPOOL.....\$193.08		TB185-CF	Torsion bar .185 Ø
	V601C	Only uses 50-2 valve..... \$193.08		TB190-CF	Torsion bar .190 Ø
3	V570-55	VALVE INPUT SHAFT .....\$340.55		TB195-CF	Torsion bar .195 Ø
	V570-50-1			TB200-CF	Torsion bar .200 Ø
	V570-50-2			TB205-CF	Torsion bar .205 Ø
4	CF20-571-306	PINION, 6T, ratio 1.57 inches/360°		TB210-CF	Torsion bar .210 Ø
	CF20-571-308	PINION, 8T, ratio 2.09 inches/360°		TB215-CF	Torsion bar .215 Ø
	CF20-571-310	PINION, 10T, ratio 2.62 inches/360°		TB220-CF	Torsion bar .220 Ø
	CF20-571-312	PINION, 12T, ratio 3.14 inches/360°.....\$223.26		TB225-CF	Torsion bar .225 Ø
		<i>Pinion with driver for steering angle sensor add.....\$47.22</i>		TB230-CF	Torsion bar .230 Ø
		<i>(The driver is part of the CF154SA angle sensor option; see Rack Parts List)</i>		TB235-CF	Torsion bar .235 Ø
5	V641	Housing snap ring (2 req) .....\$12.43		TB240-CF	Torsion bar .240 Ø
6	V572	Spool drive bolt.....\$24.67		TB245-CF	Torsion bar .245 Ø
7	V575A	Anchor screw, 5/16-24 x 5/16L w/ machined end .....\$1.29		TB250-CF	Torsion bar .250 Ø
	V576A	Anchor screw, 5/16-24 x 1/2L w/ machined end .....\$1.29		TB255-CF	Torsion bar .255 Ø
8	V575B	Bias adjustment screw, 5/16-24 x 1/4 cup point (2 req)...\$1.29		TB260-CF	Torsion bar .260 Ø
		<i>(Note: when changing a torsion bar it is best to replace both these screws.)</i>		TB265-CF	Torsion bar .265 Ø
9	V640	Ball bearing pair .....\$26.65		TB270-CF	Torsion bar .270 Ø ..... \$46.15
		<i>(Used on 306 and 307 pinions in place of V642)</i>	16	V642	Ball bearing pair with spacers ..... \$43.71
10	V574	Shaft snap ring.....\$2.52			<i>(Used on 308, 309, 310, 311 &amp; 312 pinions)</i>
		<i>(Used on 306 and 307 pinions in place of V643)</i>	17	V643	Spiral retaining ring ..... \$3.98
11	V580	End cap (1) .....\$54.45			<i>(Used on 308, 309, 310, 311 &amp; 312 pinions)</i>
20	V581-1	Input shaft seal .....\$16.67	22	CF153-1	Servo mounting flange for 306 & 307 pinions
	V582	Outer O-ring.....\$.82		CF153-2	Servo mounting flange for 308 & 309 pinions
		<i>(Note: V581 kit includes both seal and O-ring)</i>		CF153-3	Servo mounting flange for 310, 311 & 312 pinions ..... \$96.91
12	V350	Socket head cap screw, #10-24 x 3/4L (12) .....\$.31	23	V581-1	Pinion seal for 306 & 307 pinions ..... \$16.67
13	TB353	Torsion bar plug screw, 1/4-28 x 3/8 .....\$.71	24	V581-2	Pinion seal for 308 & 308 pinions ..... \$22.71
14	TB000	Torsion bar O-ring .....6/\$1.06	25	V581-3	Pinion seal for 310, 311 & 312 pinions..... \$24.99
			26	CF350A	Belleville spring lock washer, 1/4 (2)..... \$.34
			27	CF149	Torx® Button Head Screw, 1/4-20 x 3/4L, IP27 drive (2)..... \$.69
			28	CF155A	Eccentric bushing for 1/4 screw ..... \$20.69
			29	CF155B	Concentric bushing for 1/4 screw.....\$11.67
			30	R800	Spool seal kit..... \$47.84

**BOM for SEAL replacement (parts shown in RED) total.....\$90.88**