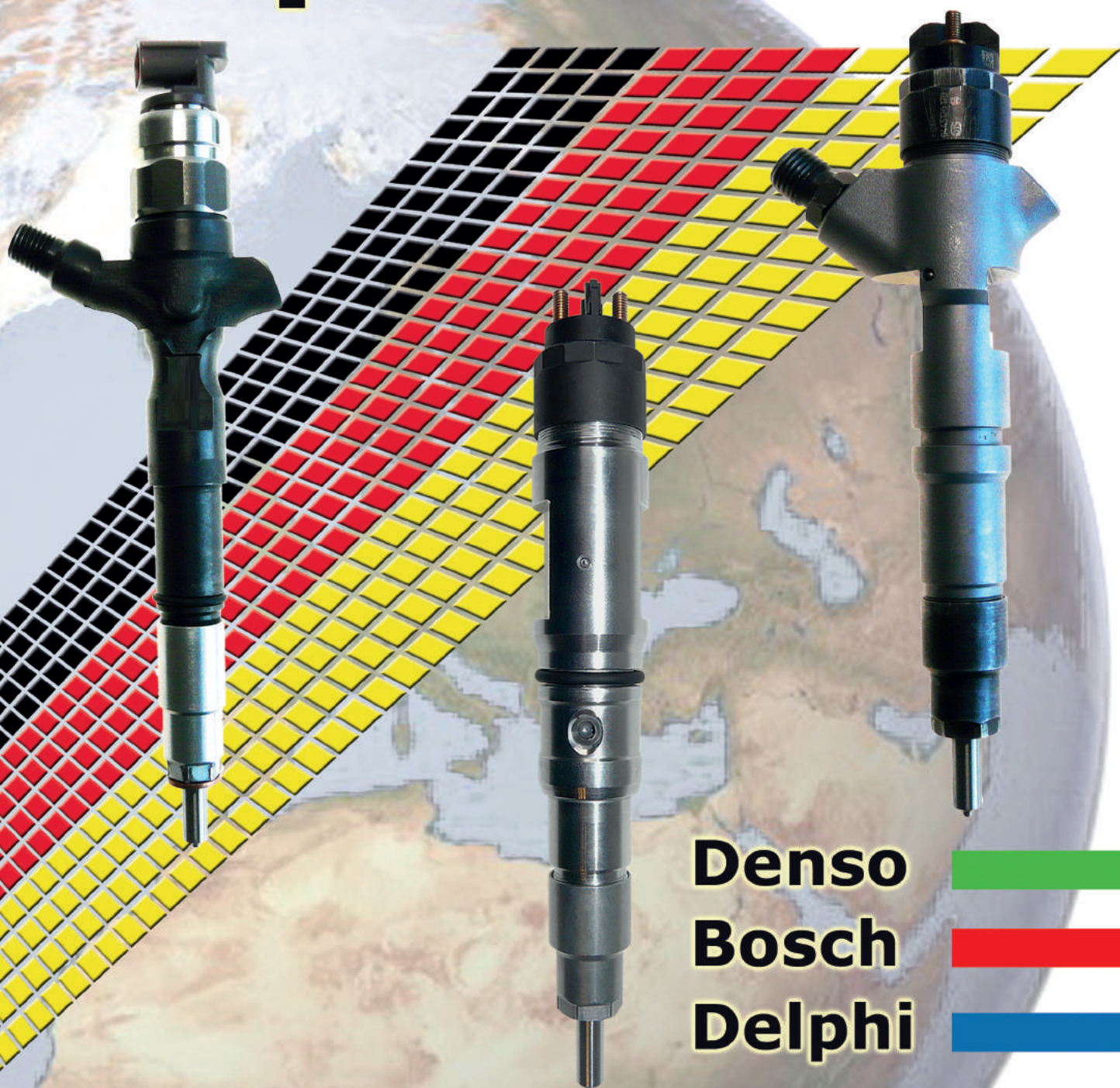


Common Rail Spare Parts



Denso

Bosch

Delphi



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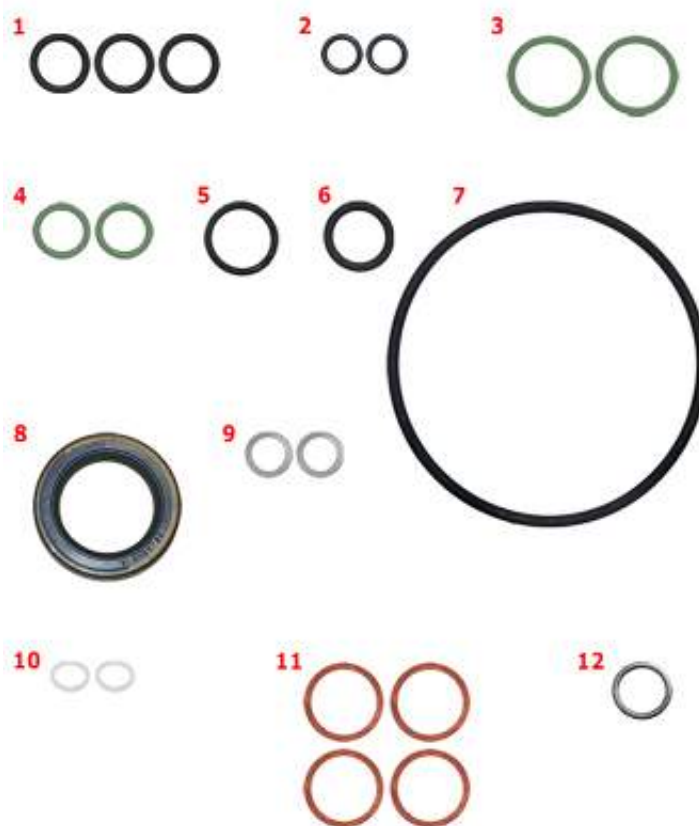
Part numbers of other manufacturers are only mentioned for comparison purposes.

Denso High Pressure Pumps

Repairkit for HP 2 Reference 097 490-0010 - with oil seal

FLAG 80 1602

For passenger cars and light-duty-vehicles

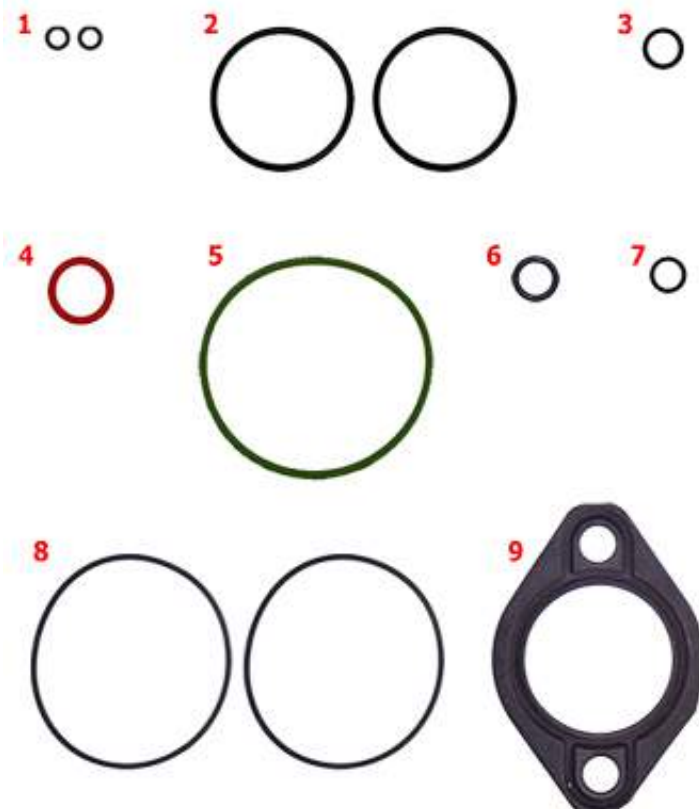


1. 81 0116
2. 81 0197
3. 81 0566
4. 81 0648
5. 81 0854
6. 81 0895
7. 81 0896
8. 81 1143
9. 82 0539
10. 83 0311
11. 84 0014
12. 84 0274

Repairkit for HP 3 Reference 294 009-0080 - without oil seal

FLAG 80 1601

For medium-duty-vehicles



1. 81 0081
2. 81 0083
3. 81 0143
4. 81 0381
5. 81 0645
6. 81 1450
7. 81 1610
8. 81 1615
9. 83 0686

Denso High Pressure Pumps

Repairkit for HP 3 Reference 294 009-0080 - with oil seal

FLAG 80 1606

For medium-duty-vehicles

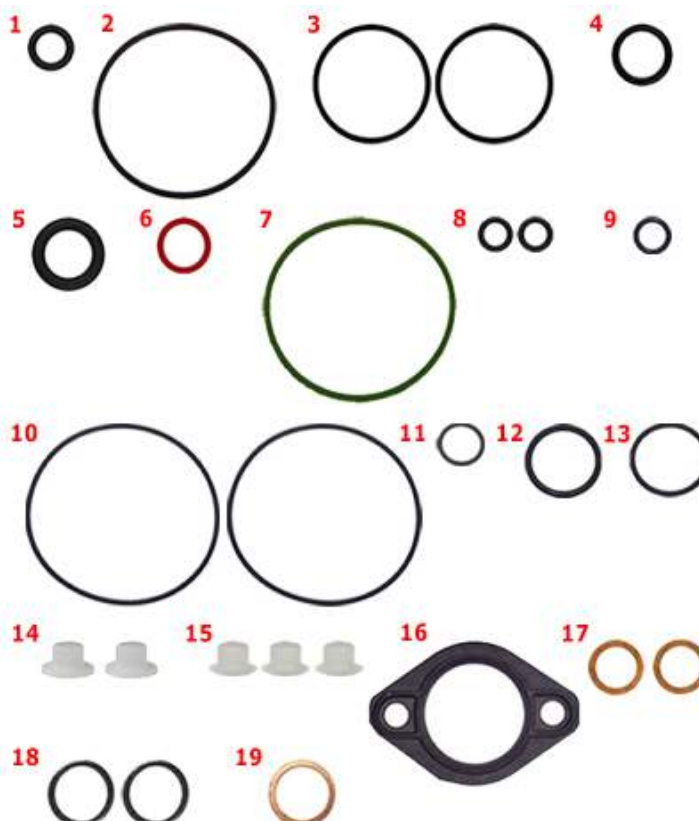


1. 81 0081
2. 81 0083
3. 81 0143
4. 81 0381
5. 81 0645
6. 81 1418
7. 81 1450
8. 81 1610
9. 81 1615
10. 83 0686

Repairkit for HP 3 Reference 294 009-0030 - without oil seal

FLAG 80 1600

For medium-duty-vehicles



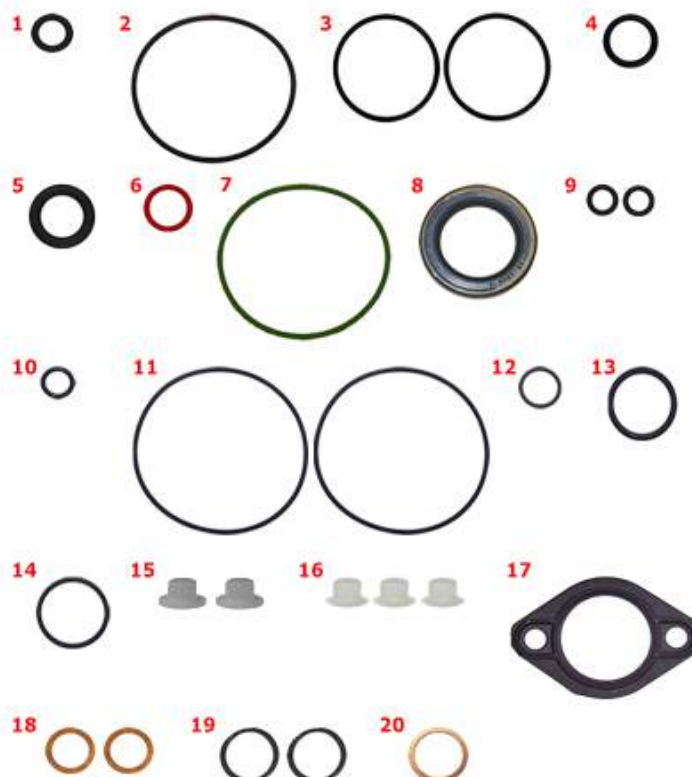
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2. 81 0028
3. 81 0083
4. 81 0116
5. 81 0196
6. 81 0381
7. 81 0645
8. 81 1449
9. 81 1610
10. 81 1615
11. 81 1618
12. 81 1624
13. 81 1632
14. 83 0005
15. 83 0006
16. 83 0686
17. 84 0144
18. 84 0167
19. 84 0178

Denso High Pressure Pumps

Repairkit for HP 3 Reference 294 009-0030 - with oil seal

FLAG 80 1605

For medium-duty-vehicles

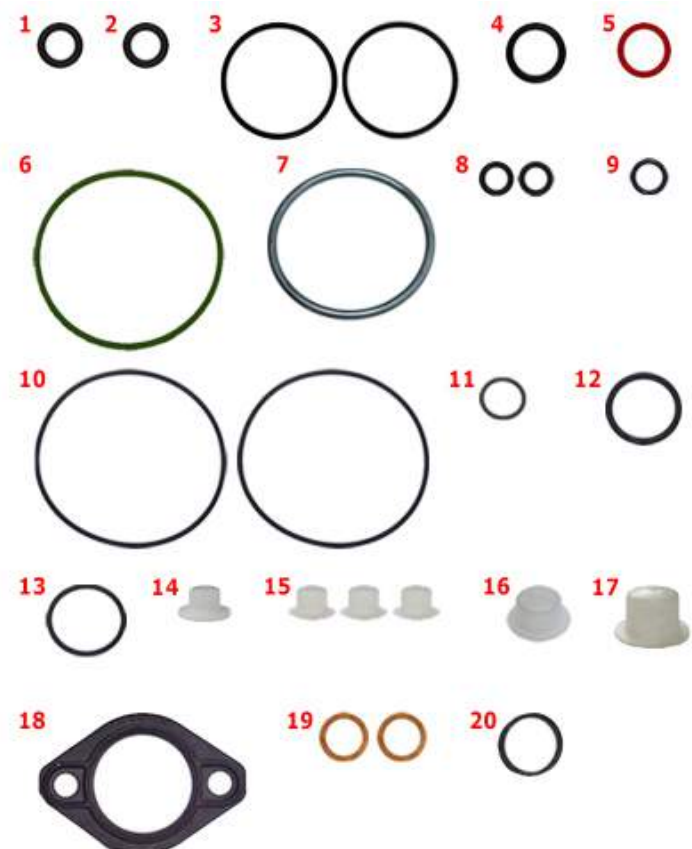


1. 81 0013
2. 81 0028
3. 81 0083
4. 81 0116
5. 81 0196
6. 81 0381
7. 81 0645
8. 81 1418
9. 81 1449
10. 81 1610
11. 81 1615
12. 81 1618
13. 81 1624
14. 81 1632
15. 83 0005
16. 83 0006
17. 83 0686
18. 84 0144
19. 84 0167
20. 84 0178

Repairkit for HP 3 Reference 294 009-0110 - without oil seal

FLAG 80 1603

For medium-duty-vehicles



1. 81 0010
2. 81 0013
3. 81 0083
4. 81 0116
5. 81 0381
6. 81 0645
7. 81 1247
8. 81 1449
9. 81 1610
10. 81 1615
11. 81 1618
12. 81 1624
13. 81 1632
14. 83 0005
15. 83 0006
16. 83 0007
17. 83 0051
18. 83 0686
19. 84 0003
20. 84 0167

Denso High Pressure Pumps

Repairkit for HP 3 Reference 294 009-0110 - with oil seal

FLAG 80 1607

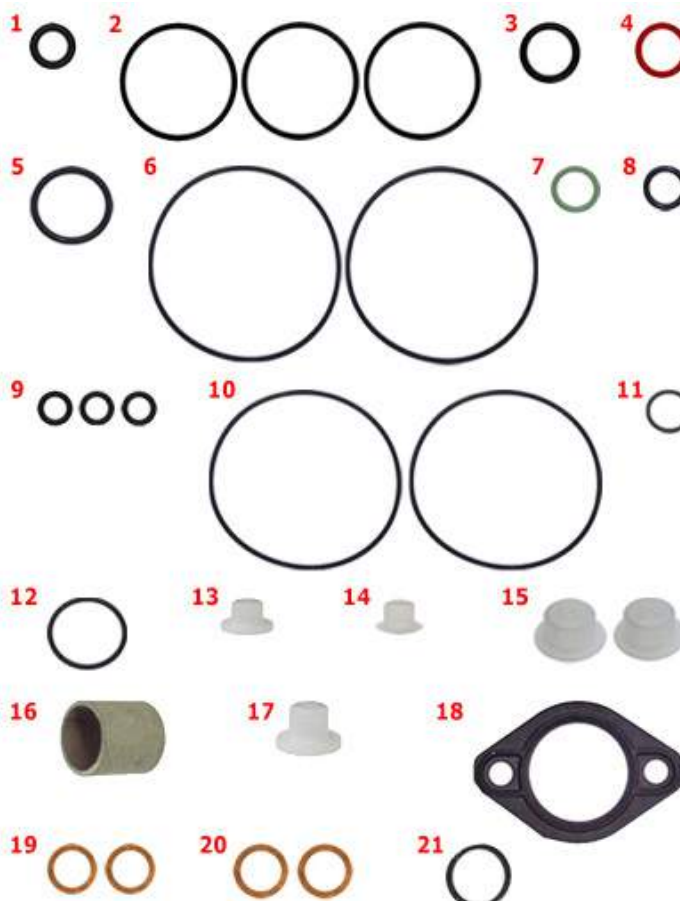
For medium-duty-vehicles



1. 81 0010
2. 81 0013
3. 81 0083
4. 81 0116
5. 81 0381
6. 81 0645
7. 81 1247
8. 81 1418
9. 81 1449
10. 81 1610
11. 81 1615
12. 81 1618
13. 81 1624
14. 81 1632
15. 83 0005
16. 83 0006
17. 83 0007
18. 83 0051
19. 83 0686
20. 84 0003
21. 84 0167

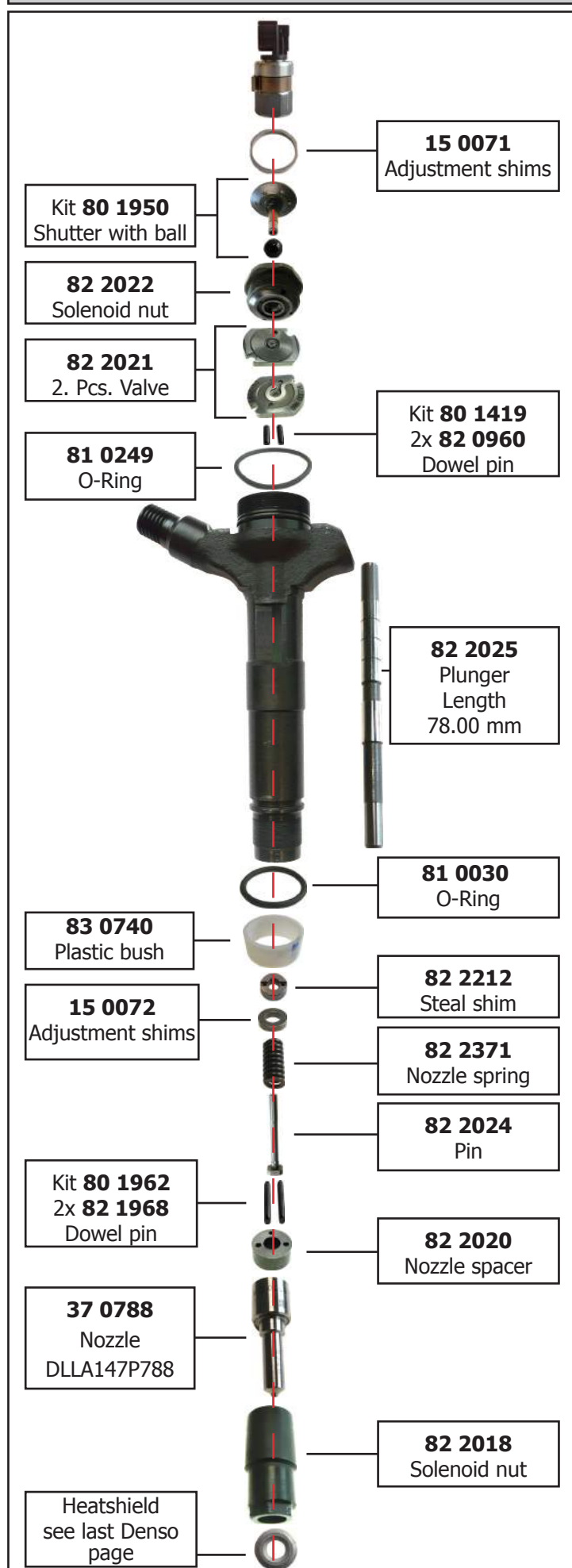
Repairkit for HP 4 Reference 294 009-0050 / 294 009-0051

FLAG 80 1604

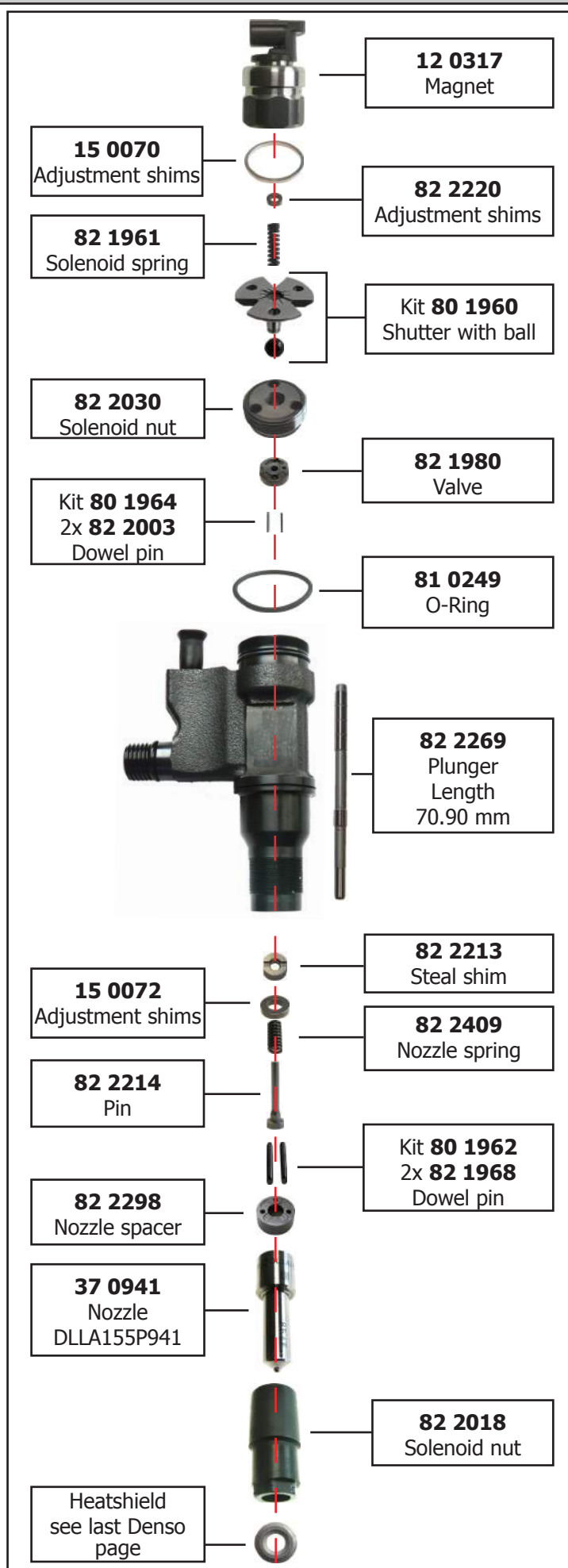


1. 81 0013
2. 81 0083
3. 81 0116
4. 81 0381
5. 81 0403
6. 81 0588
7. 81 0648
8. 81 1374
9. 81 1449
10. 81 1615
11. 81 1618
12. 81 1632
13. 83 0005
14. 83 0006
15. 83 0008
16. 83 0012
17. 83 0029
18. 83 0686
19. 84 0003
20. 84 0144
21. 84 0167

Denso 095000-077 Toyota Tiger

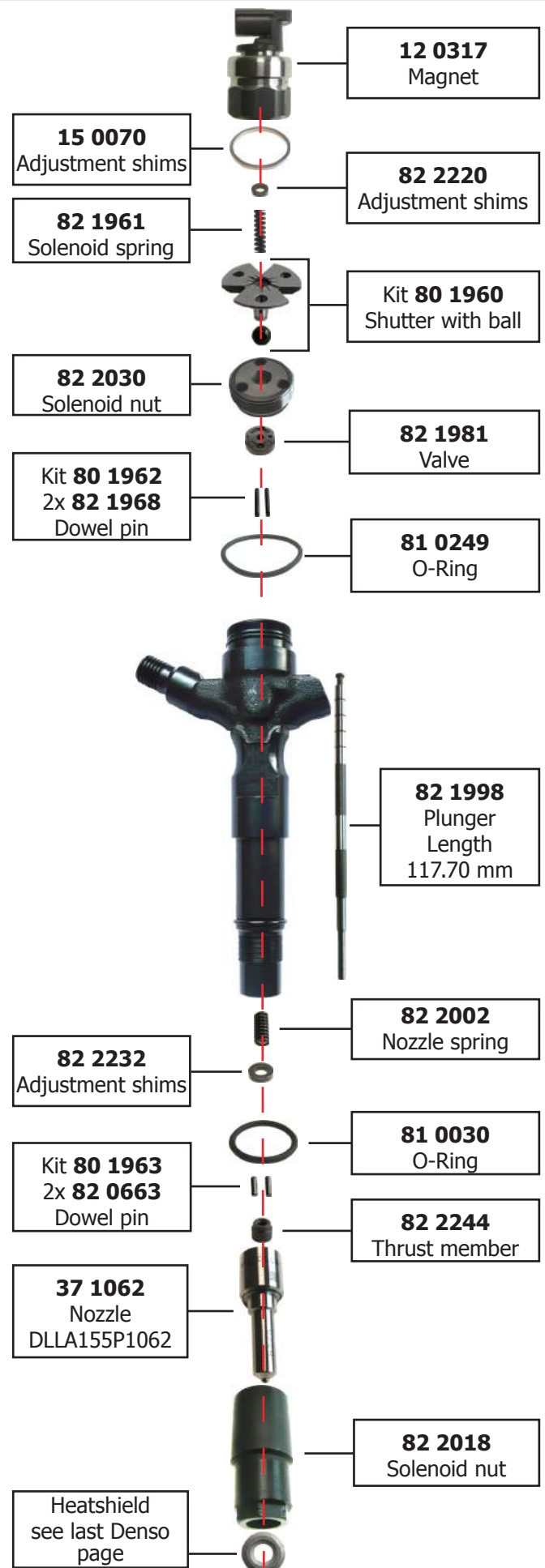
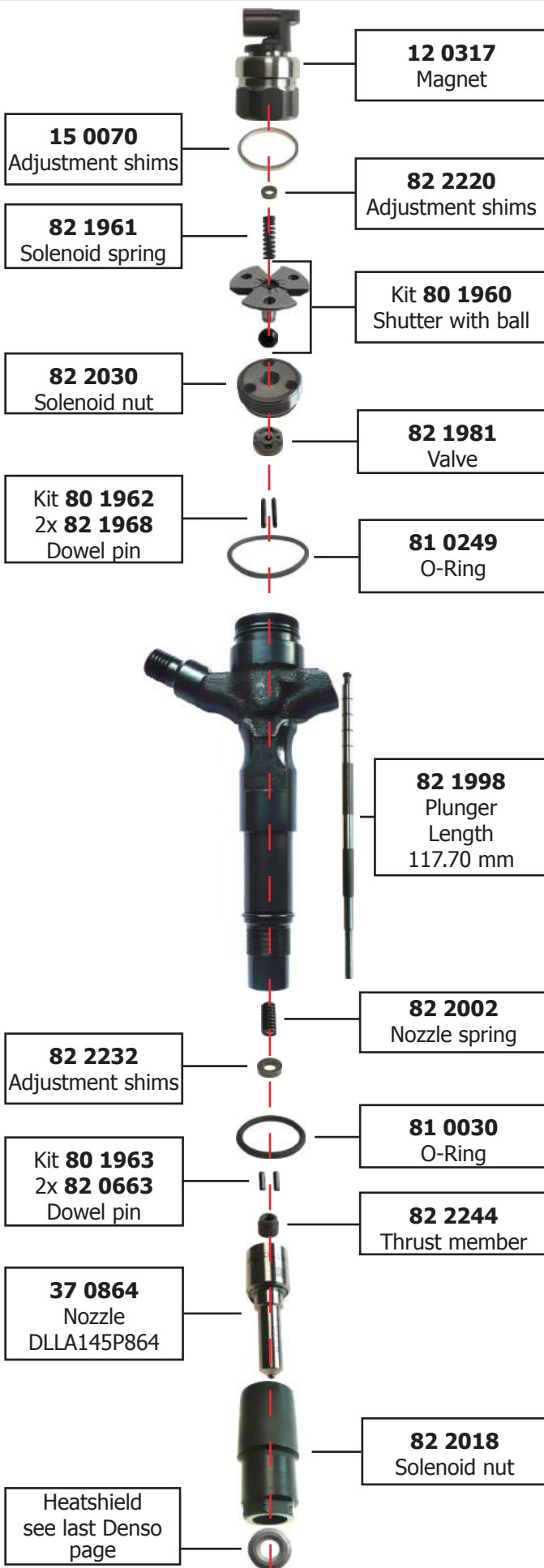


Denso 095000-651 Toyota Dyna



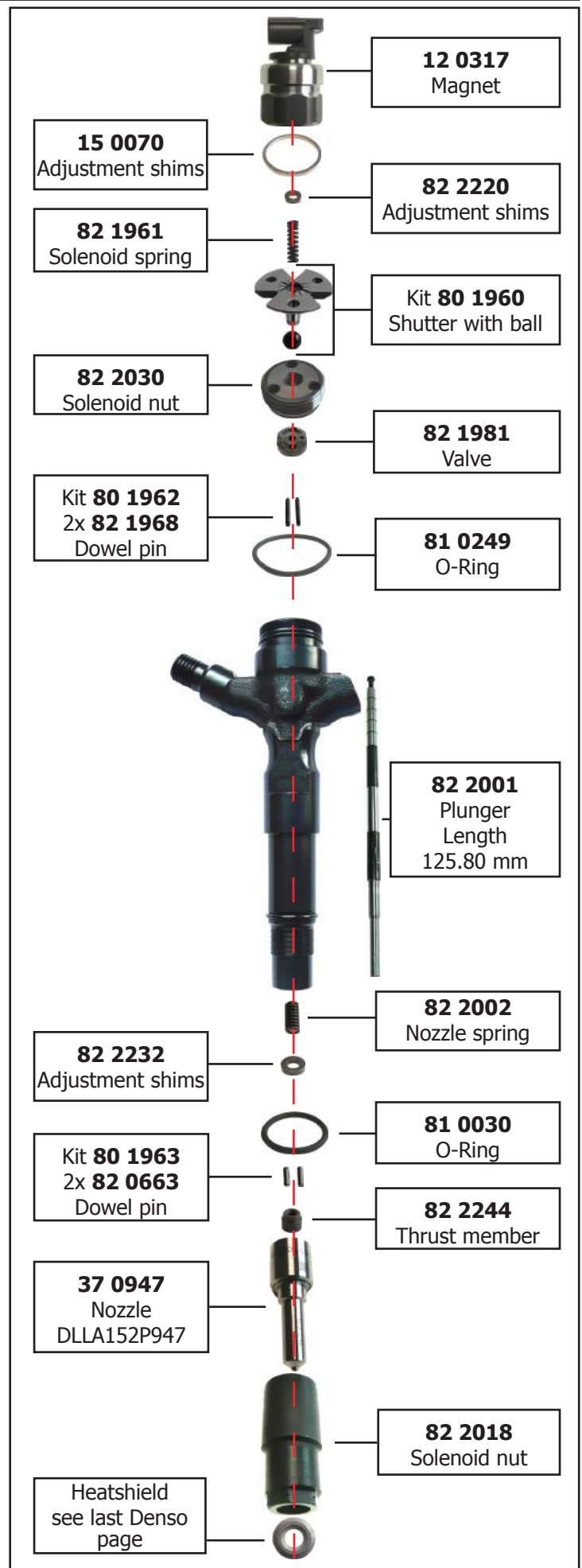
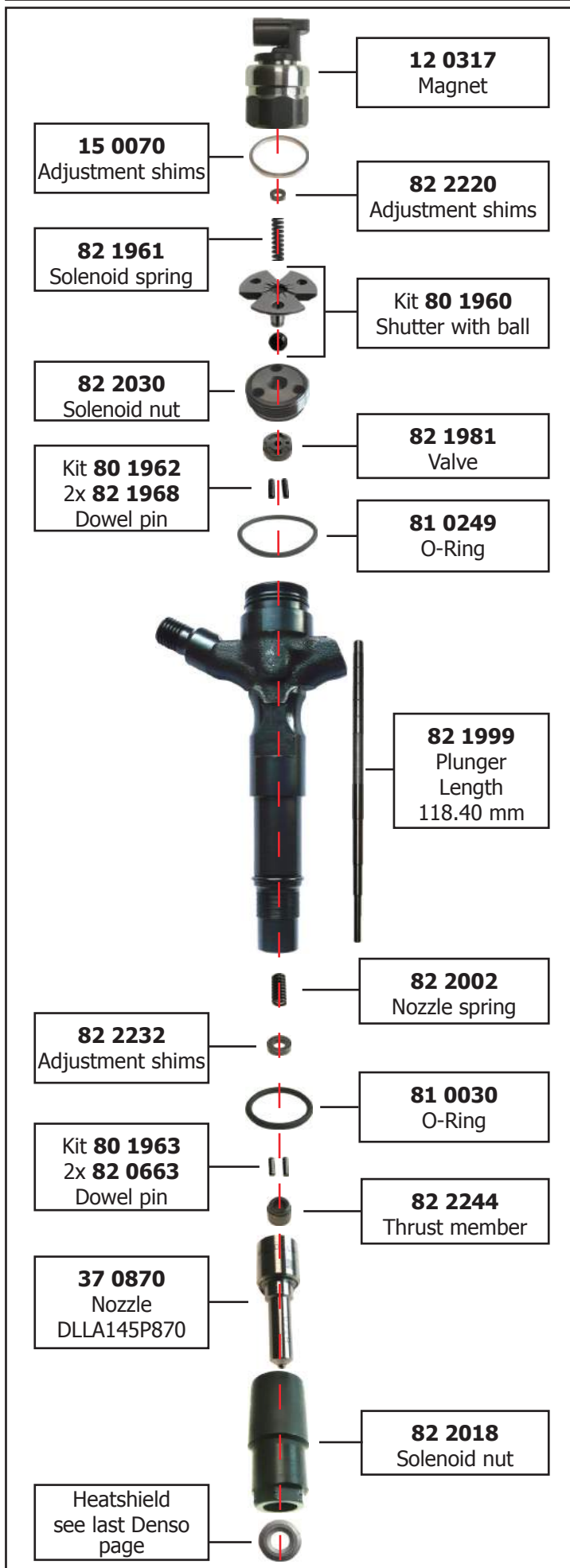
Denso 095000-776 Toyota Hilux

Denso 095000-778 Toyota Hilux



Denso 095000-560 Mitsubishi Triton

Denso 095000-625 Nissan Navara YD 25

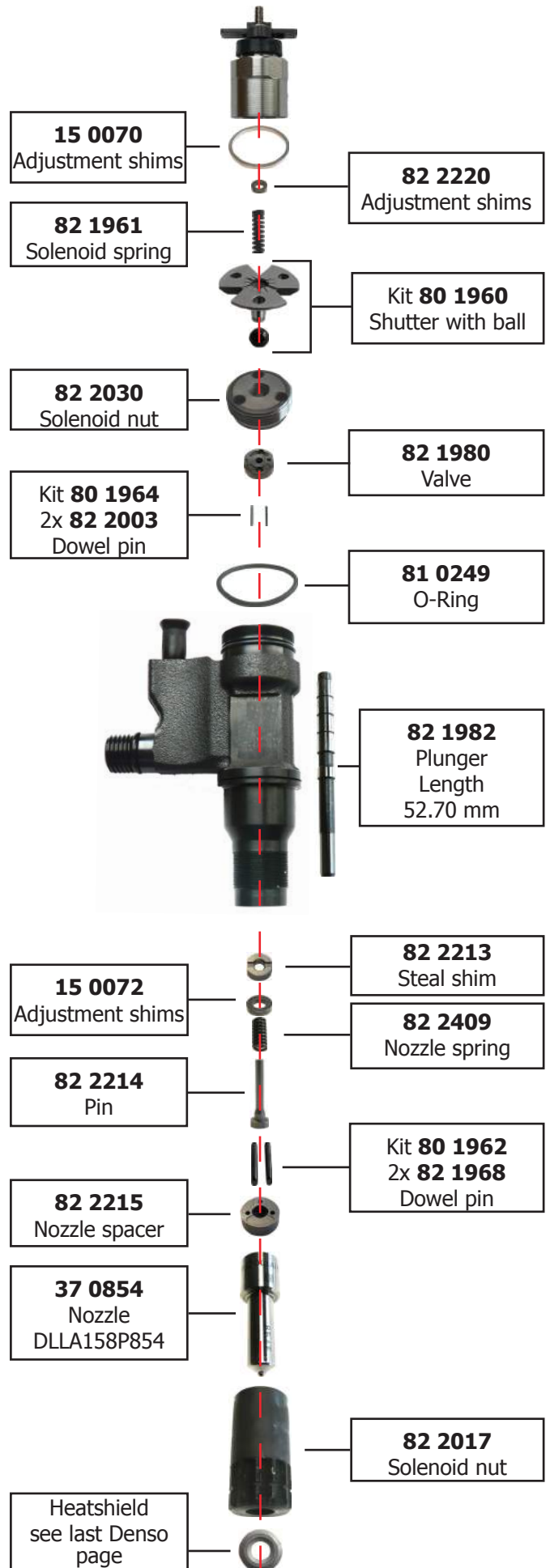
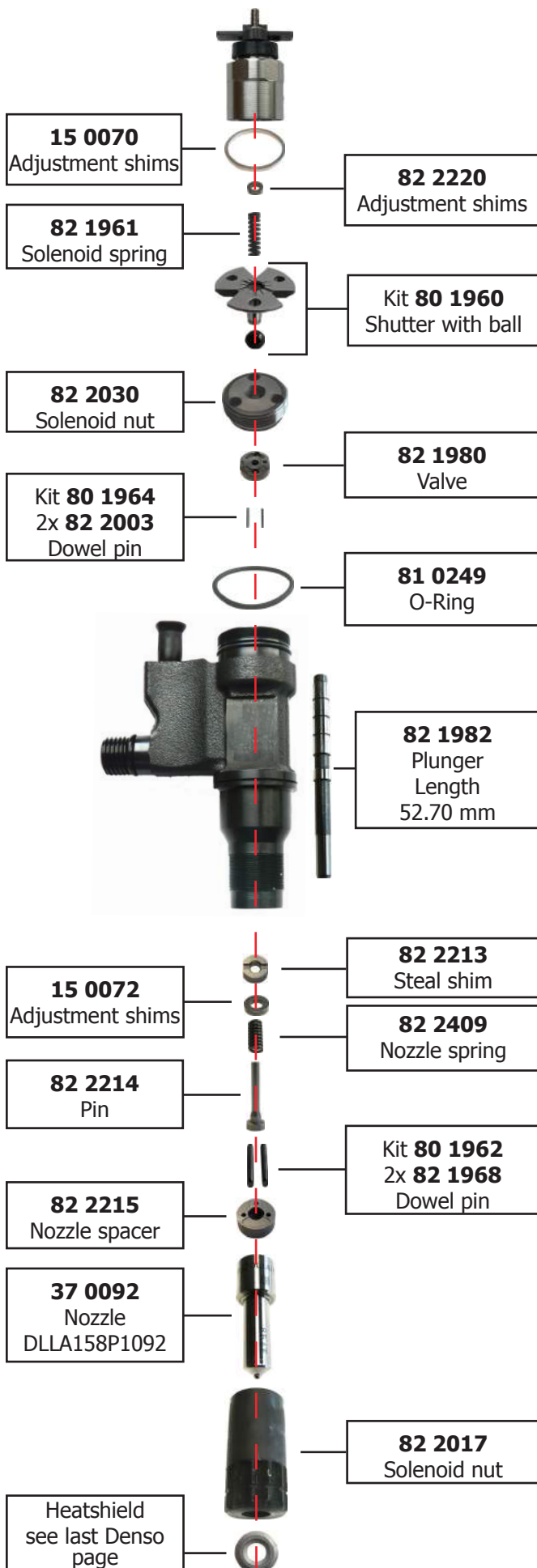


Denso Common Rail

2. Generation

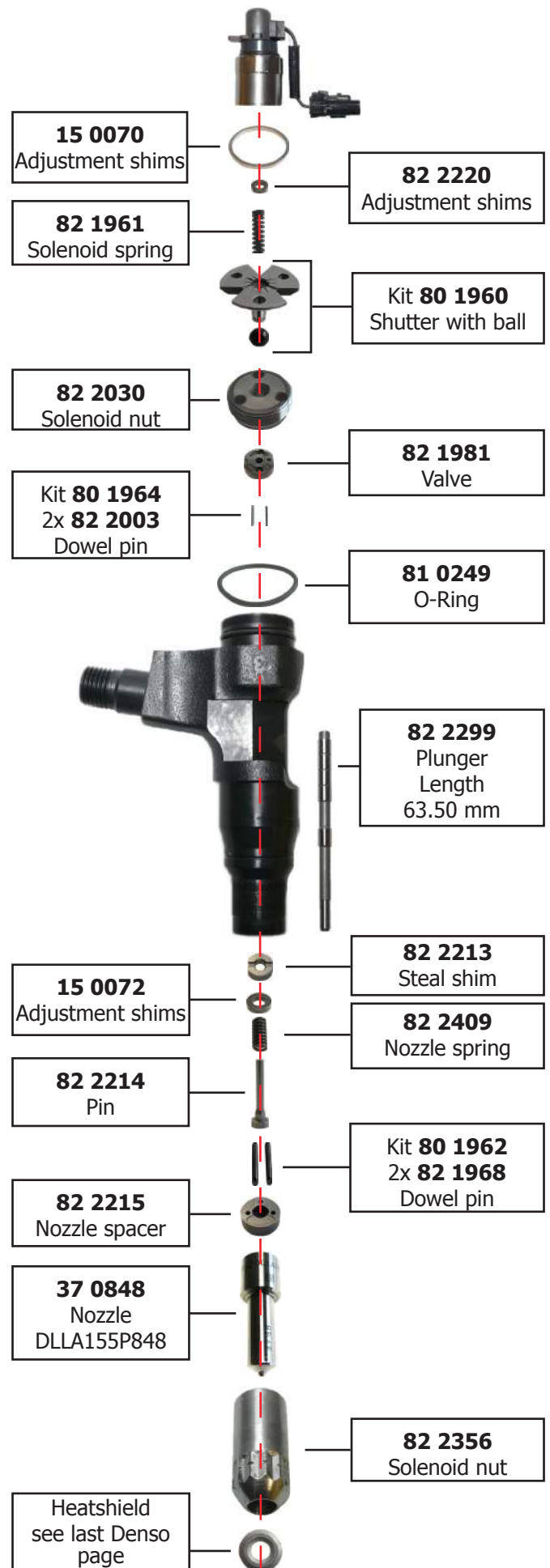
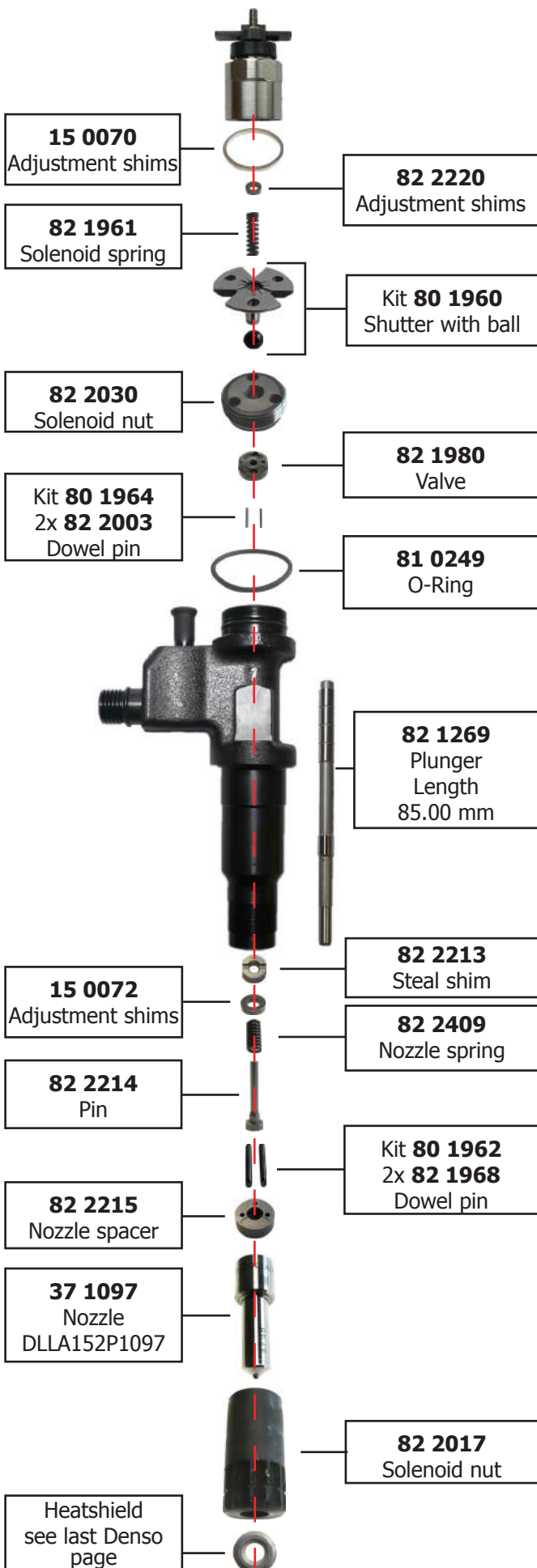
Denso 095000-534 Isuzu Hitachi

Denso 095000-547 Isuzu N-Series



Denso 095000-551 Isuzu N-Series

Denso 095000-635 Isuzu N-Series, Kobelco



Denso Common Rail Kits

Repairkit for Denso 095000-547 Isuzu N-Series

FLAG 80 1967



Length
52.70 mm



1. 82 1965
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2030
Solenoid nut
4. 82 1980
Valve
5. 82 1982
Plunger

Repairkit for Denso 095000-560 Mitsubishi Triton

FLAG 80 1968



Length
118.40 mm



1. 82 1965
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2030
Solenoid nut
4. 82 1981
Valve
5. 82 1999
Plunger

Repairkit for Denso 095000-625 Nissan Navara

FLAG 80 1969



Length
125.80 mm



1. 82 1965
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2030
Solenoid nut
4. 82 1981
Valve
5. 82 2001
Plunger

Repairkit for Denso 095000-776 Toyota Hilux

FLAG 80 1966



Length
117.70 mm



1. 82 1965
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2030
Solenoid nut
4. 82 1981
Valve
5. 82 1998
Plunger

Denso Common Rail Kits

Repairkit for Denso 095000-0941/095000-942/095000-077# Toyota Tiger

FLAG 80 1965



Length
78.00 mm



1. 82 2026
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2022
Solenoid nut
4. 82 2021
Valve
5. 82 2025
Plunger

Repairkit for Denso 095000-670 Sinotruck Howo

FLAG 80 1971



Length
77.55 mm



1. 82 1965
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2030
Solenoid nut
4. 82 2229
Valve
5. 82 2407
Plunger

Repairkit for Denso 095000-635 Kobelco N-Series

FLAG 80 1979



Length
63.50 mm



1. 82 1965
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2030
Solenoid nut
4. 82 1981
Valve
5. 82 2299
Plunger

Repairkit for Denso 095000-551 Kobelco N-Serie

FLAG 80 1984



Length
85.00 mm



1. 82 1965
Solenoid anchor
2. 82 1966
Half ball ceramic
3. 82 2030
Solenoid nut
4. 82 1981
Valve
5. 82 1269
Plunger

Denso Common Rail

Adjustment shims box set for Denso Common Rail



FLAG 15 0070

Adjustment shims box set
2 PIN Injector

12 different sizes
Total 120 pieces

shims size from
1.50 to 1.72 mm
in increments of 0.02 mm

Application
mm 24.30 x 21.50
for injectors
common rail Denso

Adjustment shims box set for Denso Common Rail



FLAG 15 0071

Adjustment shims box set
4 PIN Injector

12 different sizes
Total 120 pieces

shims size from
2.99 to 3.10 mm
in increments of 0.01 mm

Application
EXAGONAL
mm 23.20 x 20.00
for injectors
common rail Denso

Adjustment shims box set for Denso Common Rail



FLAG 15 0072

Adjustment shims box set
2 PIN Injector

12 different sizes
Total 120 pieces

shims size from
1.75 to 2.30 mm
in increments of 0.05 mm

Application
mm 6.75 x 3.50
for injectors
common rail Denso

Denso Common Rail

Nozzles

FLAG	Type-Formula	Reference	Application
37 0092	DLLA158P1092	093400-1092	Isuzu Hitachi
37 0788	DLLA147P788	093400-7880	Toyota Tiger
37 0834	DLLA158P834	093400-8340	
37 0842	DLLA155P842	093400-8420	Hino Truck
37 0844	DLLA158P844	093400-8440	Isuzu Forward
37 0848	DLLA155P848	093400-8480	Isuzu N-Series - Kobelco
37 0852	DLLA142P852	093400-8520	Isuzu D-Max
37 0854	DLLA158P854	093400-8540	Isuzu N-Series
37 0861	DLLA155P807	093400-8070	Toyota Hilux
37 0863	DLLA155P863	093400-8630	Toyota Hiace/Hilux/Landcruiser
37 0864	DLLA145P864	093400-8640	Toyota Hilux
37 0865	DLLA152P865	093400-8650	Isuzu N-Series
37 0870	DLLA145P870	093400-8700	Mitsubishi L2004
37 0872	DLLA148P872	093400-8720	Nissan Navara/Pathfinder
37 0880	DLLA155P880	093400-8800	Toyota Hilux
37 0884	DLLA153P884	093490-3530	Ford Transit/Land Rover
37 0885	DLLA155P885	093400-8850	Ford Transit
37 0941	DLLA155P941	093400-9410	Toyota Dyna/Hino
37 0947	DLLA152P947	093400-9470	Nissan Navara
37 1024	DLLA145P1024	093400-1024	Toyota Hiace/Hilux/Landcruiser
37 1062	DLLA155P1062	093400-1062	Toyota Hilux
37 1097	DLLA152P1097	093400-1097	Isuzu N-Series

Heatshields

FLAG	Reference	Dimension
82 1985	11176-26010	7.55 X 16.90 X 3.00
82 1986	11176-26020	7.55 X 16.90 X 3.55
82 1987	11176-26030	7.55 X 16.90 X 3.00
82 1988	11176-27010	7.35 X 16.95 X 3.55
82 1989	11176-30010	7.35 X 15.95 X 2.00
82 1990	11176-30011	7.35 X 15.95 X 2.00

Repairkit for Denso Common Rail

FLAG 80 1930



- 1. 81 0452
- 2. 82 0630
- 3. 82 1809

Repairkit for Denso Common Rail

FLAG 80 1931

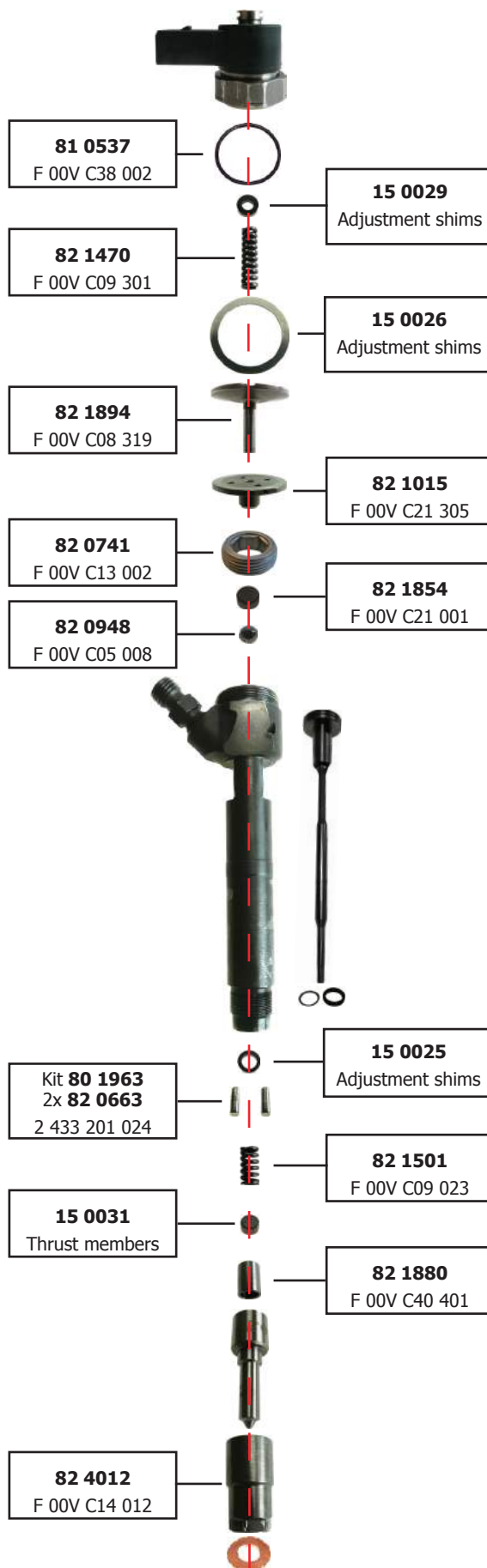
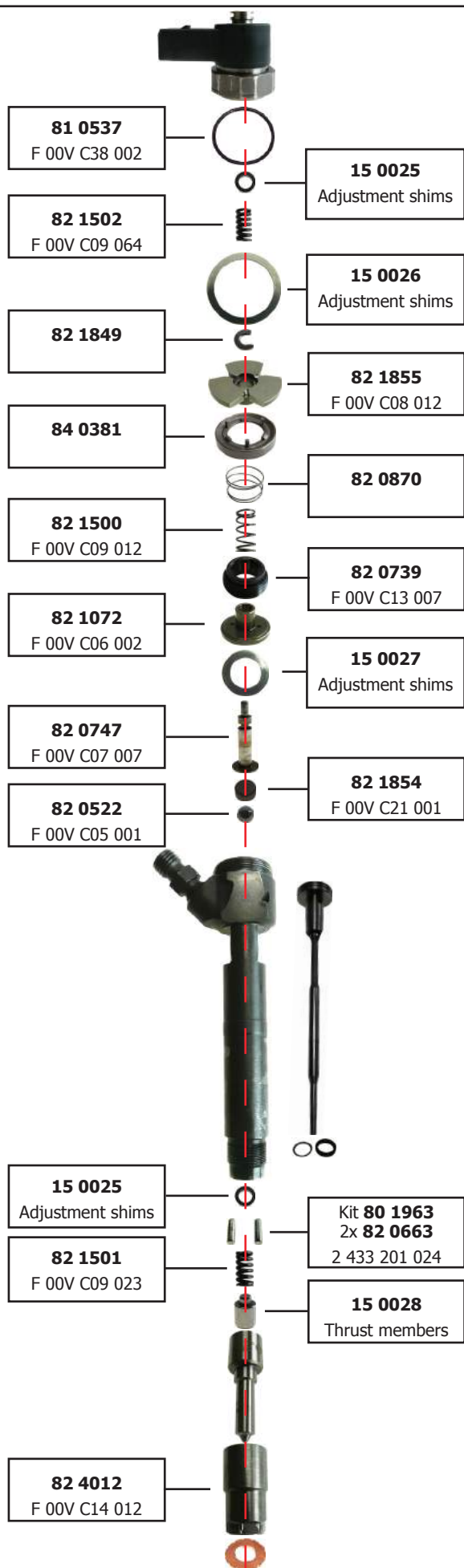


- 1. 81 0452
- 2. 82 0631
- 3. 82 1809

Bosch Common Rail

1. Generation

2. Generation



Bosch Common Rail

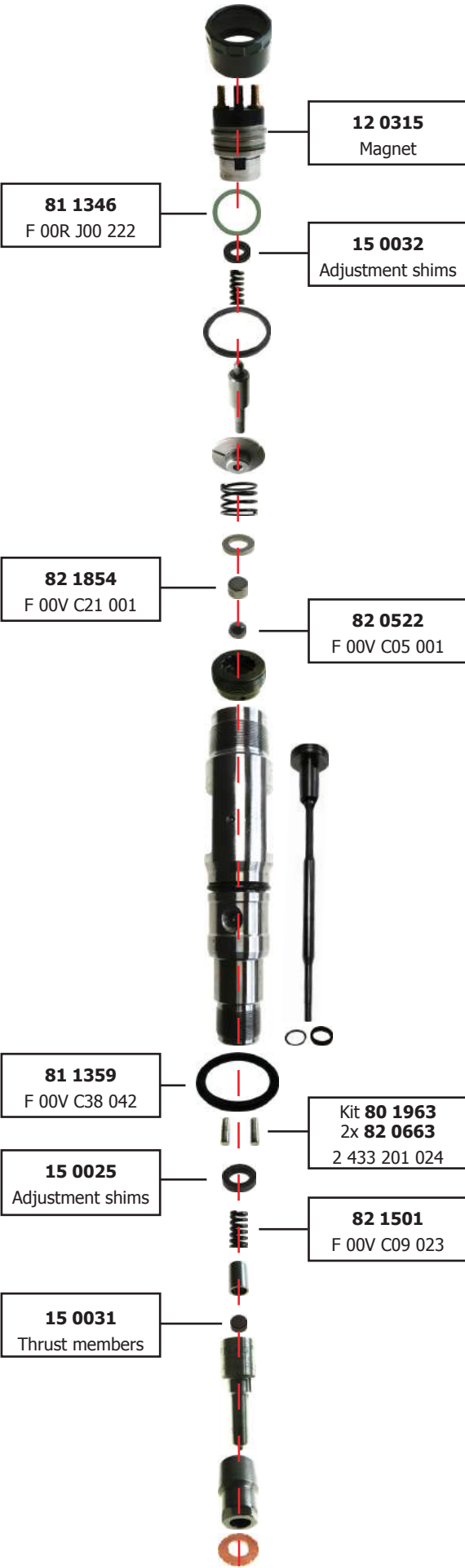
Injector		Valve Set		Seal Kit		Nozzle		Magnet	
									
FLAG	Reference	FLAG	Reference	FLAG	Reference	FLAG	Reference	FLAG	Reference
15 5002	0 445 110 002	82 1930	F 00V C01 016	80 1198	F 00V C99 002	37 5175	0 433 175 175	12 0310	F 00V C30 055
15 5011	0 445 110 011	82 1361	F 00V C01 001	80 1198	F 00V C99 002	37 5163	0 433 175 163	12 0300	F 00V C30 054
15 5014	0 445 110 014	82 1361	F 00V C01 001	80 1198	F 00V C99 002	37 5164	0 433 175 164	12 0330	F 00V C30 053
15 5024	0 445 110 024	82 1361	F 00V C01 001	80 1198	F 00V C99 002	37 5163	0 433 175 163	12 0300	F 00V C30 054
15 5034	0 445 110 034	82 1361	F 00V C01 001	80 1198	F 00V C99 002	37 1594	0 433 171 594	12 0300	F 00V C30 054
15 5038	0 445 110 038	82 2040	F 00V C01 011	80 1198	F 00V C99 002	37 5253	0 433 175 253	12 0312	F 00V C30 058
15 5047	0 445 110 047	82 2041	F 00V C01 043	80 1198	F 00V C99 002	37 1616	0 433 171 616	12 0311	F 00V C30 057
15 5048	0 445 110 048	82 2041	F 00V C01 043	80 1198	F 00V C99 002	37 1617	0 433 171 617	12 0311	F 00V C30 057
15 5054	0 445 110 054	82 1357	F 00V C01 309	80 1198	F 00V C99 002	37 5314	0 433 175 314	12 0301	F 00V C30 326
15 5063	0 445 110 063	82 2040	F 00V C01 011	80 1198	F 00V C99 002	37 5278	0 433 175 278	12 0312	F 00V C30 058
15 5064	0 445 110 064	82 1339	F 00V C01 044	80 1198	F 00V C99 002	37 1654	0 433 171 654	12 0311	F 00V C30 057
15 5069	0 445 110 069	82 1361	F 00V C01 001	80 1198	F 00V C99 002	37 5298	0 433 175 298	12 0300	F 00V C30 054
15 5071	0 445 110 071	82 1361	F 00V C01 001	80 1198	F 00V C99 002	37 5163	0 433 175 163	12 0300	F 00V C30 054
15 5076	0 445 110 076	82 1933	F 00V C01 053	80 1198	F 00V C99 002	37 5431	0 433 175 431	12 0311	F 00V C30 057
15 5083	0 445 110 083	82 2042	F 00V C01 038	80 1198	F 00V C99 002	37 1774	0 433 171 774	12 0316	F 00V C30 316
15 5084	0 445 110 084	82 2043	F 00V C01 022	80 1198	F 00V C99 002	37 1695	0 433 171 695	12 0312	F 00V C30 058
15 5087	0 445 110 087	82 2043	F 00V C01 022	80 1198	F 00V C99 002	37 5318	0 433 175 318	12 0312	F 00V C30 058
15 5095	0 445 110 095	82 1331	F 00V C01 045	80 1198	F 00V C99 002	37 1712	0 433 171 712	12 0300	F 00V C30 054
15 5099	0 445 110 099	82 1331	F 00V C01 045	80 1198	F 00V C99 002	37 5326	0 433 175 326	12 0300	F 00V C30 054
15 5101	0 445 110 101	82 1339	F 00V C01 044	80 1198	F 00V C99 002	37 1654	0 433 171 654	12 0311	F 00V C30 057
15 5105	0 445 110 105	82 1331	F 00V C01 045	80 1198	F 00V C99 002	37 5395	0 433 175 395	12 0300	F 00V C30 054
15 5107	0 445 110 107	82 1331	F 00V C01 045	80 1198	F 00V C99 002	37 5395	0 433 175 395	12 0300	F 00V C30 054
15 5115	0 445 110 115	82 1321	F 00V C01 024	80 1198	F 00V C99 002	37 5342	0 433 175 342	12 0330	F 00V C30 053
15 5120	0 445 110 120	82 1331	F 00V C01 045	80 1198	F 00V C99 002	37 1712	0 433 171 712	12 0300	F 00V C30 054
15 5131	0 445 110 131	82 2044	F 00V C01 310	80 1198	F 00V C99 002	37 1690	0 433 171 696	12 0325	F 00V C30 325
15 5155	0 445 110 155	82 1364	F 00V C01 328	80 1198	F 00V C99 002	37 1800	0 433 171 800	12 0301	F 00V C30 326
15 5176	0 445 110 176	82 1364	F 00V C01 328	80 1198	F 00V C99 002	37 1800	0 433 171 800	12 0301	F 00V C30 326
15 5183	0 445 110 183	82 2045	F 00V C01 334	80 1198	F 00V C99 002	37 1889	0 433 171 889	12 0303	F 00V C30 318
15 5190	0 445 110 189	82 1338	F 00V C01 051	80 1198	F 00V C99 002	37 5395	0 433 175 395	12 0300	F 00V C30 054
15 5201	0 445 110 201	82 1338	F 00V C01 051	80 1198	F 00V C99 002	37 1712	0 433 171 712	12 0300	F 00V C30 054
15 5205	0 445 110 205	82 1338	F 00V C01 051	80 1198	F 00V C99 002	37 1913	0 433 171 913	12 0300	F 00V C30 054
15 5239	0 445 110 239	82 1355	F 00V C01 315	80 1198	F 00V C99 002	37 1914	0 433 171 914	12 0302	F 00V C30 307
15 5250	0 445 110 250	82 2095	F 00V C01 349	80 1198	F 00V C99 002	37 1921	0 433 171 921	12 0318	F 00V C30 308
15 5253	0 445 110 253	82 2046	F 00V C01 346	80 1198	F 00V C99 002	37 1933	0 433 171 933	12 0319	F 00V C30 319
15 5254	0 445 110 254	82 2046	F 00V C01 346	80 1198	F 00V C99 002	37 1933	0 433 171 933	12 0319	F 00V C30 319
15 5255	0 445 110 255	82 2048	F 00V C01 347	80 1198	F 00V C99 002	37 1931	0 433 171 931	12 0303	F 00V C30 318
15 5257	0 445 110 257	82 2046	F 00V C01 346	80 1198	F 00V C99 002	37 1932	0 433 171 932	12 0319	F 00V C30 319
15 5258	0 445 110 258	82 2046	F 00V C01 346	80 1198	F 00V C99 002	37 1932	0 433 171 932	12 0319	F 00V C30 319
15 5269	0 445 110 269	82 2046	F 00V C01 346	80 1198	F 00V C99 002	37 1980	0 433 171 980	12 0319	F 00V C30 319
15 5270	0 445 110 270	82 2046	F 00V C01 346	80 1198	F 00V C99 002	37 1980	0 433 171 980	12 0319	F 00V C30 319
15 5279	0 445 110 279	82 1935	F 00V C01 033	80 1198	F 00V C99 002	37 1848	0 433 171 848	12 0312	F 00V C30 058
15 5301	0 445 110 301	82 2047	F 00V C01 331	80 1198	F 00V C99 002	37 2021	0 433 172 021	12 0303	F 00V C30 318

Bosch Common Rail

Typ 1

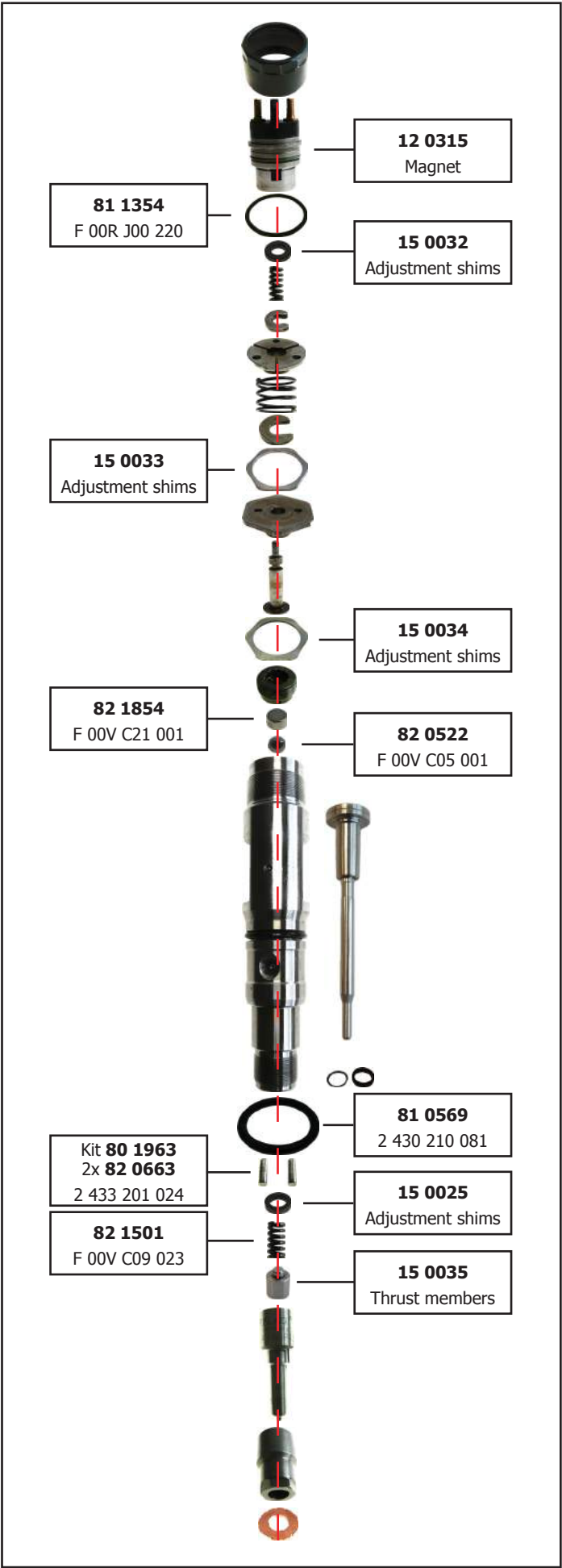


Typ 2



Bosch Common Rail

Typ 3



Bosch Common Rail

Injector		Valve Set		Seal Kit		Nozzle		Support	
									
FLAG	Reference	FLAG	Reference	FLAG	Reference	FLAG	Reference	FLAG	Reference
15 6002	0 445 120 002	82 1991	F 00R J00 005	80 2176	F 00R J02 176	37 5203	0 433 175 203		
15 6003	0 445 120 003	82 1992	F 00R J00 218	80 2176	F 00R J02 176	37 1562	0 433 171 562	82 2053	F 00R J01 919
15 6004	0 445 120 004	82 1992	F 00R J00 218	80 2176	F 00R J02 176	37 1562	0 433 171 562	82 2053	F 00R J01 919
15 6007	0 445 120 007	82 1925	F 00R J00 339	80 2176	F 00R J02 176	37 5271	0 433 175 271	82 2051	F 00R J00 414
15 6011	0 445 120 011	82 2084	F 00R J00 420	80 2176	F 00R J02 176	37 5297	0 433 175 297		
15 6012	0 445 120 012	82 2085	F 00R J01 895	80 2176	F 00R J02 176	37 1681	0 433 171 681		
15 6014	0 445 120 014	82 1941	F 00R J00 399	80 2176	F 00R J02 176	37 1683	0 433 171 683	82 2053	F 00R J01 919
15 6016	0 445 120 016	82 2085	F 00R J01 895	80 2176	F 00R J02 176	37 1682	0 433 171 682		
15 6019	0 445 120 019	82 1941	F 00R J00 399	80 2176	F 00R J02 176	37 1699	0 433 171 699	82 2053	F 00R J01 919
15 6031	0 445 120 031	82 2086	F 00R J00 995	80 2176	F 00R J02 176	37 1814	0 433 171 814	82 1227	F 00R J01 247
15 6036	0 445 120 036	82 1993	F 00R J01 176	80 2176	F 00R J02 176	37 1855	0 433 171 855		
15 6044	0 445 120 044	82 1994	F 00R J01 159	80 2176	F 00R J02 176	37 1878	0 433 171 878	82 1227	F 00R J01 247
15 6061	0 445 120 061	82 1340	F 00R J02 466	80 2176	F 00R J02 176	37 1939	0 433 171 939	82 1237	F 00R J01 029
15 6064	0 445 120 064	82 2091	F 00R J01 451	80 2176	F 00R J02 176	37 1963	0 433 171 963	82 2057	F 00R J01 457
15 6084	0 445 120 084	82 1941	F 00R J00 399	80 2176	F 00R J02 176	37 1699	0 433 171 699	82 2058	F 00R J00 463
15 6086	0 445 120 086	82 1967	F 00R J01 727	80 2176	F 00R J02 176	37 2016	0 433 172 016	82 2055	F 00R J01 730
15 6087	0 445 120 087	82 1967	F 00R J01 727	80 2176	F 00R J02 176	37 2015	0 433 172 015	82 2055	F 00R J01 730
15 6095	0 445 120 095	82 2088	F 00R J02 397	80 2176	F 00R J02 176	37 1927	0 433 171 927		
15 6110	0 445 120 110	82 1924	F 00R J02 806	80 2176	F 00R J02 176	37 2034	0 433 172 034	82 2050	F 00R J01 706
15 6121	0 445 120 121	82 1927	F 00R J01 941	80 2176	F 00R J02 176	37 1047	0 433 172 047		
15 6122	0 445 120 122	82 1927	F 00R J01 941	80 2176	F 00R J02 176	37 7045	0 433 172 045		
15 6123	0 445 120 123	82 1995	F 00R J02 130	80 2176	F 00R J02 176	37 5481	0 433 175 481	82 2054	F 00R J01 620
15 6124	0 445 120 124	82 1996	F 00R J01 657	80 2176	F 00R J02 176	37 2038	0 433 172 038	82 2062	F 00R J01 659
15 6126	0 445 120 126	82 2089	F 00R J02 266	80 2176	F 00R J02 176	37 2069	0 433 172 069		
15 6127	0 445 120 127	82 1967	F 00R J01 727	80 2176	F 00R J02 176	37 2039	0 433 172 039	82 2055	F 00R J01 730
15 6129	0 445 120 129	82 1923	F 00R J01 692	80 2176	F 00R J02 176	37 2059	0 433 172 059		
15 6131	0 445 120 131	82 2090	F 00R J02 561	80 2176	F 00R J02 176	37 2073	0 433 172 073	82 2063	F 00R J02 075
15 6136	0 445 120 136	82 2091	F 00R J01 451	80 2176	F 00R J02 176	37 1963	0 433 171 963	82 2057	F 00R J01 457
15 6137	0 445 120 137	82 2091	F 00R J01 451	80 2176	F 00R J02 176	37 1963	0 433 171 963	82 2057	F 00R J01 457
15 6138	0 445 120 138	82 2091	F 00R J01 451	80 2176	F 00R J02 176	37 1965	0 433 171 965	82 2057	F 00R J01 457
15 6139	0 445 120 139	82 2091	F 00R J01 451	80 2176	F 00R J02 176	37 1965	0 433 171 965	82 2057	F 00R J01 457
15 6147	0 445 120 147	82 2092	F 00R J01 865	80 2176	F 00R J02 176	37 2094	0 433 172 094	82 2056	F 00R J00 753
15 6148	0 445 120 148	82 2092	F 00R J01 865	80 2176	F 00R J02 176	37 2084	0 433 172 084	82 2056	F 00R J00 753
15 6155	0 445 120 155	82 2096	F 00R J02 044	80 2176	F 00R J02 176	37 2042	0 433 172 042	82 2064	F 00R J02 047
15 6156	0 445 120 156	82 1924	F 00R J02 806	80 2176	F 00R J02 176	37 2108	0 433 172 108	82 2050	F 00R J01 706
15 6160	0 445 120 160	82 1997	F 00R J02 035	80 2176	F 00R J02 176	37 2114	0 433 172 114	82 2065	F 00R J02 301
15 6162	0 445 120 162	82 2097	F 00R J02 449	80 2176	F 00R J02 176	37 7120	0 433 172 120	82 2066	F 00R J02 321
15 6163	0 445 120 163	82 1923	F 00R J01 692	80 2176	F 00R J02 176	37 7116	0 433 172 116		
15 6164	0 445 120 164	82 1924	F 00R J02 806	80 2176	F 00R J02 176	37 2115	0 433 172 115		
15 6170	0 445 120 170	82 1923	F 00R J01 692	80 2176	F 00R J02 176	37 2111	0 433 172 111		
15 6186	0 445 120 186	82 2097	F 00R J02 449	80 2176	F 00R J02 176	37 2119	0 433 172 119	82 2066	F 00R J02 321
15 6197	0 445 120 197	82 2093	F 00R J02 410	80 2176	F 00R J02 176	37 2042	0 433 172 042	82 2064	F 00R J02 047
15 6200	0 445 120 200	82 1923	F 00R J01 692	80 2176	F 00R J02 176	37 2059	0 433 172 059		
15 6201	0 445 120 201	82 2093	F 00R J02 410	80 2176	F 00R J02 176	37 2157	0 433 172 157	82 2064	F 00R J02 047

Bosch Common Rail

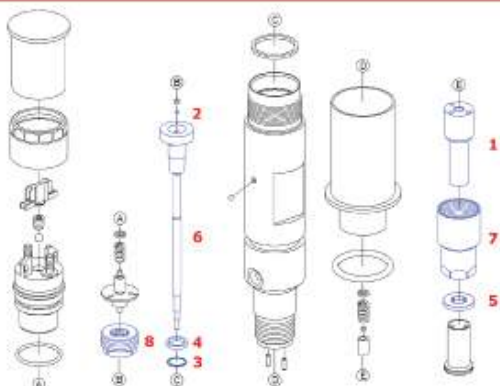
Injector		Valve Set		Seal Kit		Nozzle		Support	
									
FLAG	Reference	FLAG	Reference	FLAG	Reference	FLAG	Reference	FLAG	Reference
15 6202	0 445 120 202	82 2093	F 00R J02 410	80 2176	F 00R J02 176	37 2158	0 433 172 158	82 2064	F 00R J02 047
15 6215	0 445 120 215	82 1997	F 00R J02 035	80 2176	F 00R J02 176	37 2166	0 433 172 166	82 2068	F 00R J02 543
15 6217	0 445 120 217	82 1340	F 00R J02 466	80 2176	F 00R J02 176	37 1939	0 433 171 939	82 1237	F 00R J01 029
15 6218	0 445 120 218	82 1340	F 00R J02 466	80 2176	F 00R J02 176	37 1831	0 433 171 831	82 1237	F 00R J01 029
15 6219	0 445 120 219	82 1340	F 00R J02 466	80 2176	F 00R J02 176	37 2004	0 433 172 004	82 1237	F 00R J01 029
15 6224	0 445 120 224	82 1923	F 00R J01 692	80 2176	F 00R J02 176	37 2111	0 433 172 111	82 2061	F 00R J01 481
15 6226	0 445 120 226	82 1923	F 00R J01 692	80 2176	F 00R J02 176	37 7116	0 433 172 116		
15 6231	0 445 120 231	82 1995	F 00R J02 130	80 2176	F 00R J02 176	37 5510	0 433 175 510	82 2054	F 00R J01 620

Bosch Common Rail

Repairkit for Bosch 0 445 120 218 MAN TGA Reference F 00R J02 817

FLAG 80 2817

Repairkit for Bosch 0 445 120 218 FLAG 80 2817

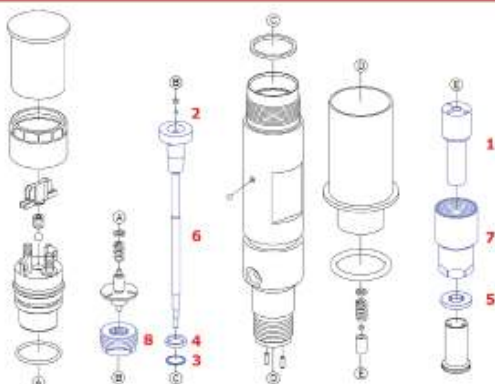


- | | | | |
|----|---------|---------------|-------------------|
| 1. | 37 1831 | 0 433 171 831 | Nozzle |
| 2. | 82 0522 | F 00V C05 001 | Steel ball |
| 3. | 82 0669 | | Shim |
| 4. | 83 0655 | | Control ring |
| 5. | 84 0390 | F 00R J02 175 | Heat shield |
| 6. | 82 1340 | F 00R J02 466 | Valve unit CR |
| 7. | 82 2264 | F 00R J02 219 | Nozzle holder nut |
| 8. | 82 2656 | F 00R J00 656 | Nut |

Repairkit for Bosch 0 455 120 044 MAN Reference F 00R J02 818

FLAG 80 2818

Repairkit for Bosch 0 455 120 044 FLAG 80 2818

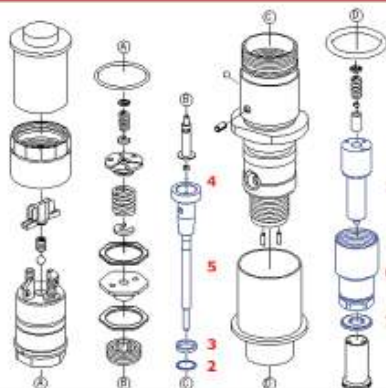


- | | | | |
|----|---------|---------------|-------------------|
| 1. | 37 1878 | 0 433 171 878 | Nozzle |
| 2. | 82 0522 | F 00V C05 001 | Steel ball |
| 3. | 82 0669 | | Shim |
| 4. | 83 0655 | | Control ring |
| 5. | 84 0390 | F 00R J02 175 | Heat shield |
| 6. | 82 1994 | F 00R J01 159 | Valve unit CR |
| 7. | 82 2264 | F 00R J02 219 | Nozzle holder nut |
| 8. | 82 2656 | F 00R J00 656 | Nut |

Repairkit for Bosch 0 445 120 123 CUMMINS KAMAZ Reference F 00R J02 818

FLAG 80 2821

Repairkit for Bosch 0 445 120 123 FLAG 80 2821



- | | | | |
|----|---------|---------------|-------------------|
| 1. | 37 5481 | 0 433 175 481 | Nozzle |
| 2. | 82 0669 | | Shim |
| 4. | 83 0655 | | Control ring |
| 4. | 82 0522 | F 00V C05 001 | Steel ball |
| 5. | 82 1995 | F 00R J02 130 | Valve unit CR |
| 6. | 82 3841 | F 00R J00 841 | Nozzle holder nut |
| 7. | 84 0392 | F 00R J01 453 | Heat shield |

Bosch Common Rail

Heatshields

FLAG	Reference	Dimension
84 0094	F 00V C17 504	7.70/7.00 X 15.00 X 2.00
84 0096	F 00V C17 503	7.70/7.00 X 15.00 X 1.50
84 0129	F 00V C17 505	7.70/7.00 X 13.00 X 2.50
84 0390	F 00R J02 175	7.70/7.00 X 14.50 X 1.50
84 0391	F 00R J01 086	7.70/7.00 X 15.00 X 2.00
84 0392	F 00R J01 453	7.70/7.00 X 15.00 X 1.50

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1155



1. 81 0537
2. 82 0522
3. 82 0594
4. 82 0669
5. 83 0111
6. 83 0655

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1165



1. 82 0522
2. 82 1501
3. 82 1502
4. 82 1503
5. 82 1838
6. 82 1843
7. 82 1849
8. 82 1854

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1157



1. 81 0537
2. 82 0522
3. 82 0663
4. 83 0655

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1162



1. 81 0340
2. 81 1525
3. 83 0741

Bosch Common Rail

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1149



- 1. 81 0452
- 2. 82 0495
- 3. 83 0645

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1153



- 1. 81 0452
- 2. 82 0495
- 3. 83 0648

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1168



- 1. 82 0495
- 2. 82 0626

Repairkit for Bosch Common Rail Injectors 110 Serie

FLAG 80 1169



- 1. 82 0495
- 2. 82 0627

Common Rail Return Line



FLAG	Application
80 1301	4 Cyl.; d=3.00mm D=7.00mm length=66cm Material=plastic
80 1304	4 Cyl.; d=3.00mm D=7.00mm length=66cm Material=brass

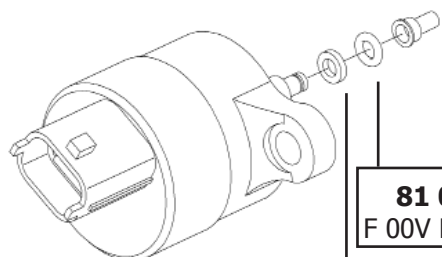
Common Rail Return Line



FLAG	Application
80 1302	6 Cyl. ; d=3.00mm D=7.00mm length=86cm Material=plastic
80 1305	6 Cyl. ; d=3.00mm D=7.00mm length=86cm Material=brass

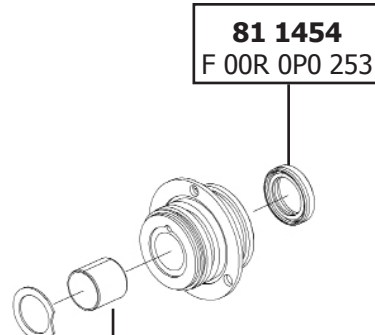
Bosch Common Rail

High Pressure Pump CR/CP 1S3



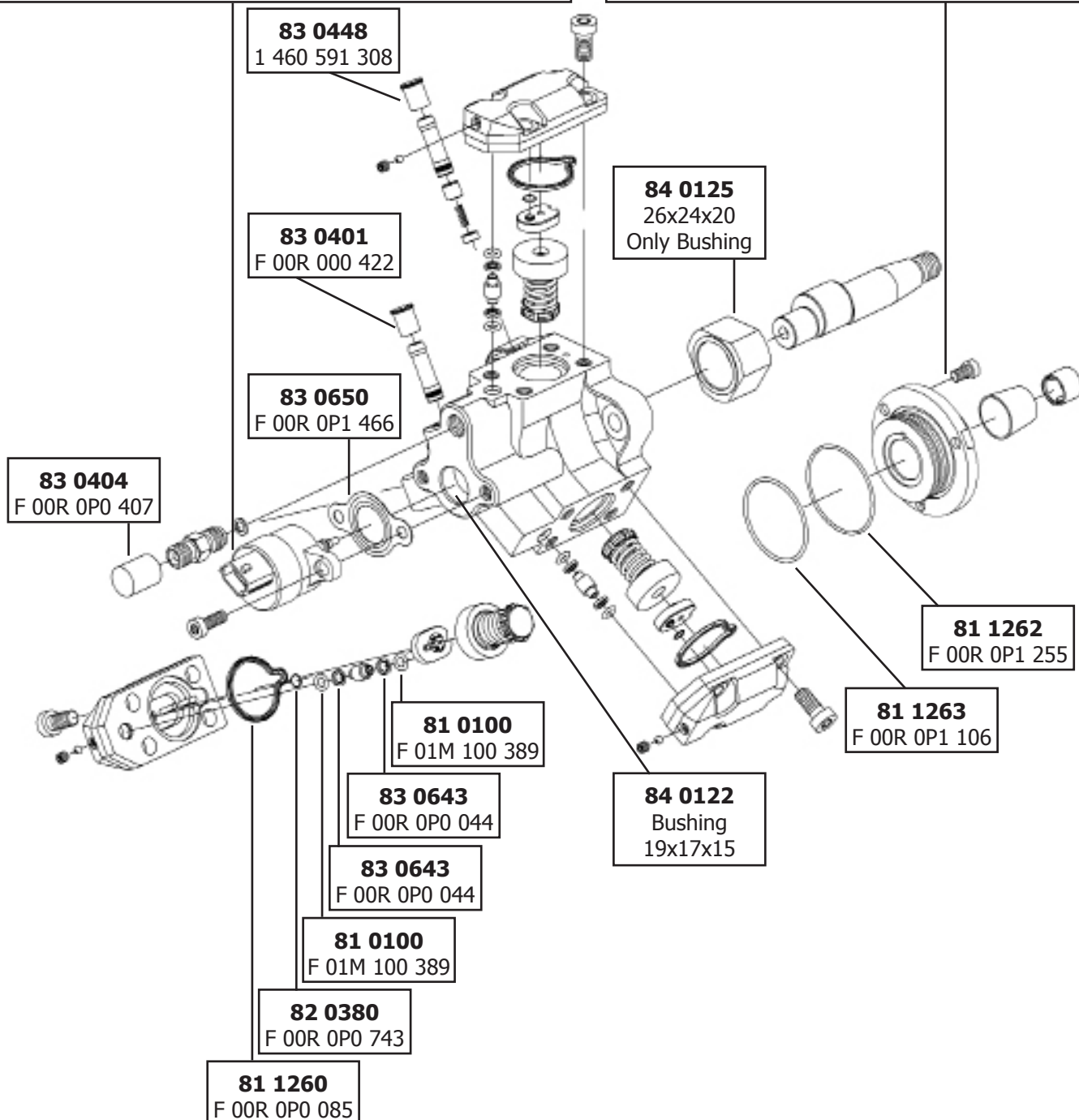
81 0340
F 00V D38 011

83 0741
F 00N 000 066



81 1454
F 00R 0P0 253

84 0124
22x20x20



83 0448
1 460 591 308

83 0401
F 00R 000 422

83 0650
F 00R 0P1 466

83 0404
F 00R 0P0 407

84 0125
26x24x20
Only Bushing

81 1262
F 00R 0P1 255

81 1263
F 00R 0P1 106

81 0100
F 01M 100 389

83 0643
F 00R 0P0 044

83 0643
F 00R 0P0 044

81 0100
F 01M 100 389

82 0380
F 00R 0P0 743

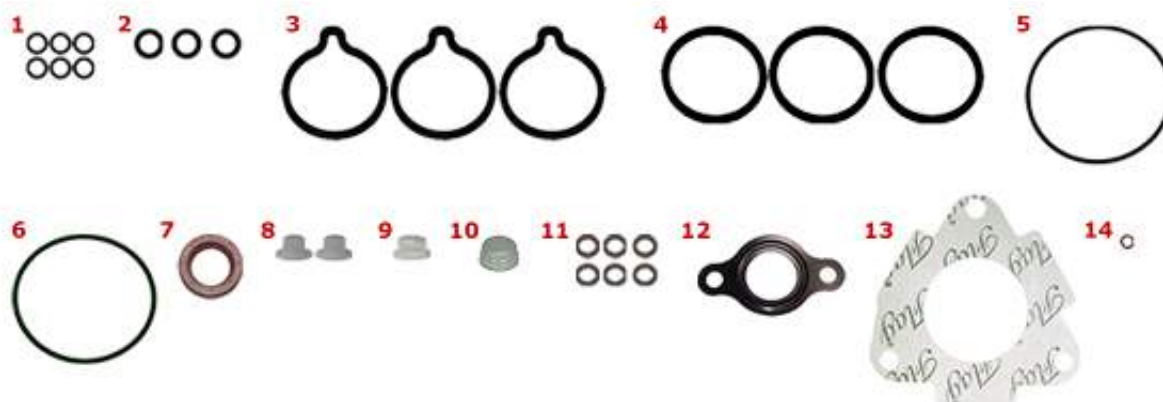
81 1260
F 00R 0P0 085

84 0122
Bushing
19x17x15

Bosch Common Rail

Repairkit for CR/CP 1 Reference CR/CP1 S..Kit

FLAG 80 1095



1. 81 0081
2. 81 0199
3. 81 1260
4. 81 1261
5. 81 1262
6. 81 1263
7. 81 1626
8. 83 0005
9. 83 0008
10. 83 0111
11. 83 0643
12. 83 0650
13. 83 0656
14. 84 0002

Repairkit for CR/CP 1 Reference F 01M 101 454

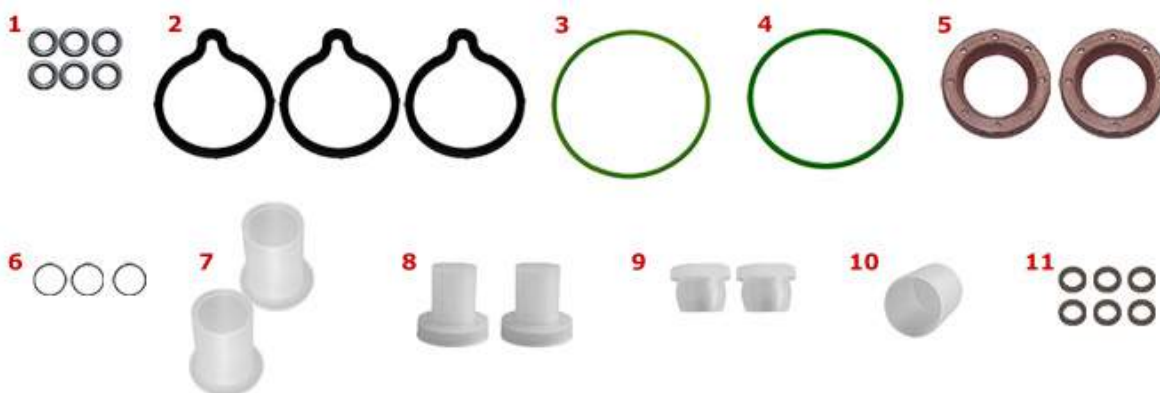
FLAG 80 1254



1. 81 0100
2. 81 1260
3. 81 1262
4. 81 1263
5. 82 0380
6. 83 0401
7. 83 0402
8. 83 0403
9. 83 0404
10. 83 0643

Repairkit for CR/CP 1 Reference F 01M 100 275

FLAG 80 1114



1. 81 0100
2. 81 1260
3. 81 1262
4. 81 1263
5. 81 1626
6. 82 0380
7. 83 0401
8. 83 0402
9. 83 0403
10. 83 0404
11. 83 0643

Repairkit for CR/CP 1 Reference CR/CP1 Bushing Kit

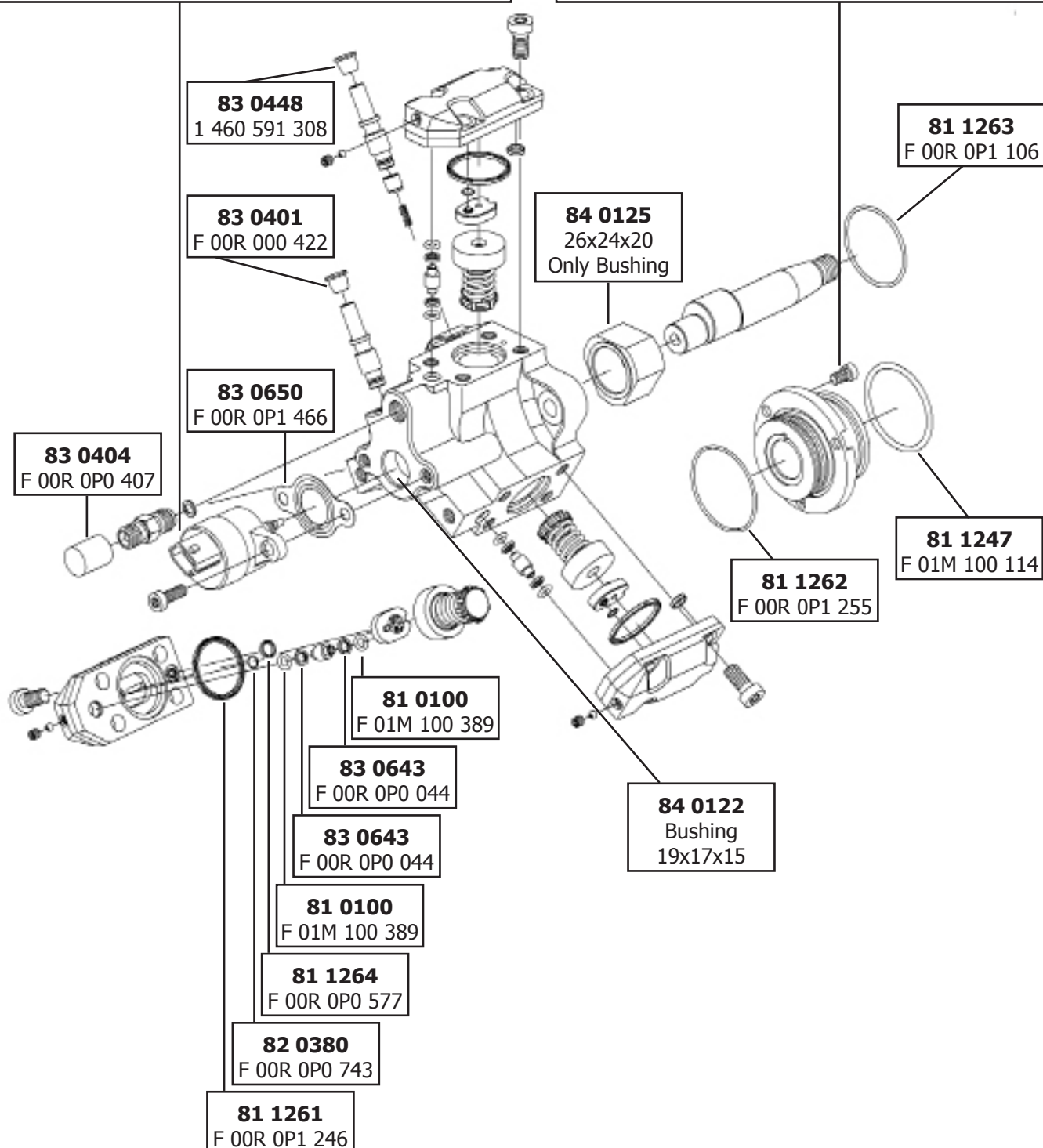
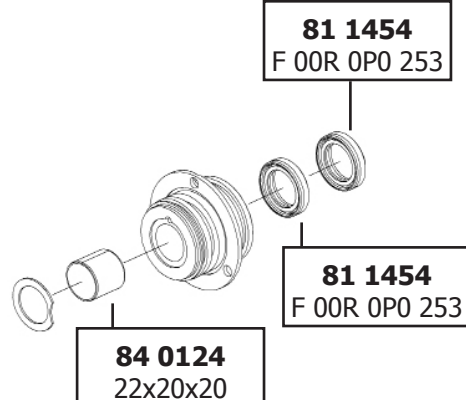
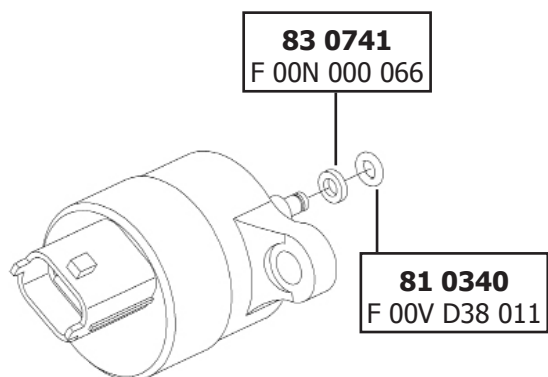
FLAG 80 1124



1. 84 0122
2. 84 0124
3. 84 0125

Bosch Common Rail

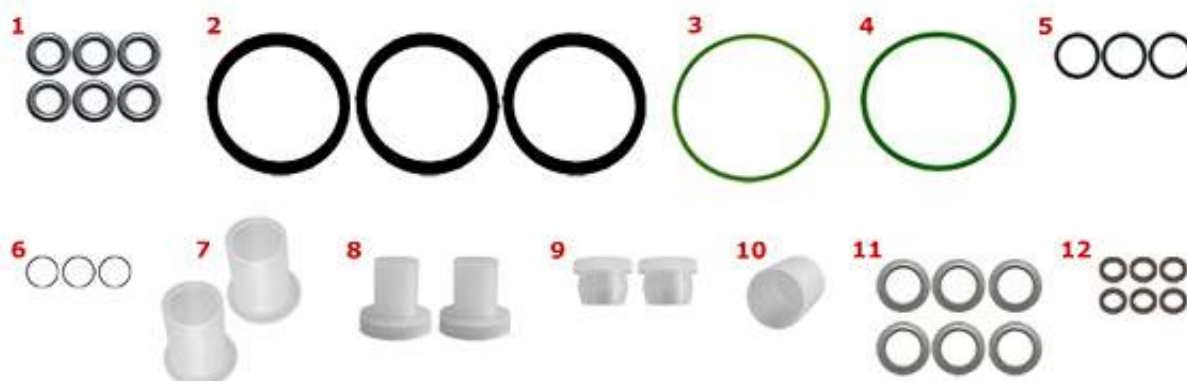
High Pressure Pump CR/CP 1K3



Bosch Common Rail

Repairkit for CR/CP 1 Reference F 01M 101 455

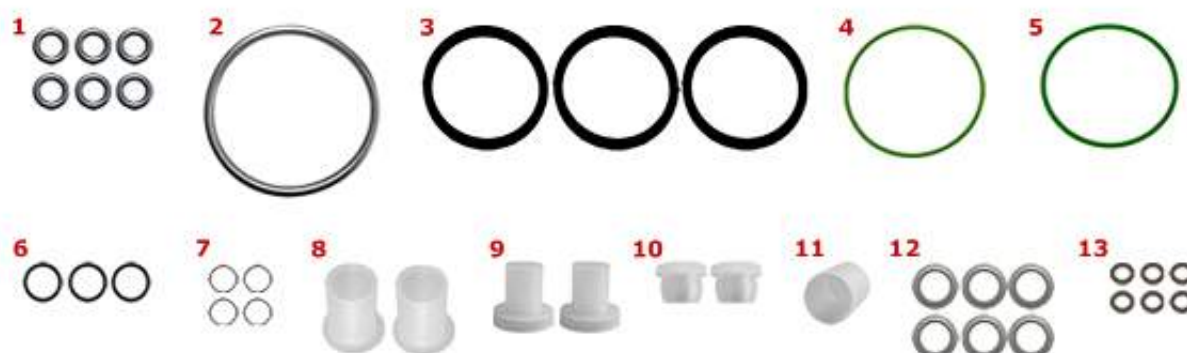
FLAG 80 1253



1. 81 0100
2. 81 1261
3. 81 1262
4. 81 1263
5. 81 1264
6. 82 0380
7. 83 0401
8. 83 0402
9. 83 0403
10. 83 0404
11. 83 0641
12. 83 0643

Repairkit for CR/CP 1 Reference F 01M 101 456

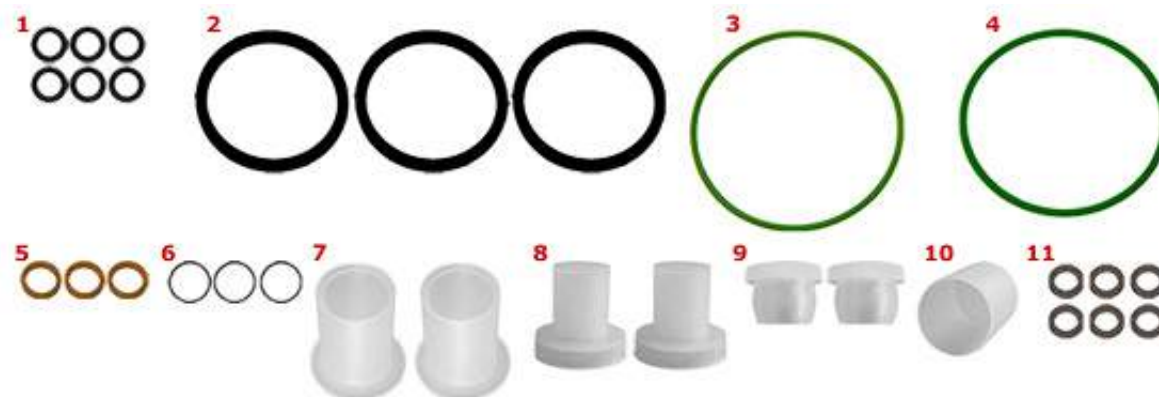
FLAG 80 1259



1. 81 0100
2. 81 1247
3. 81 1261
4. 81 1262
5. 81 1263
6. 81 1264
7. 82 0380
8. 83 0401
9. 83 0402
10. 83 0403
11. 83 0404
12. 83 0461
13. 83 0643

Repairkit for CR/CP 1 Reference F 01M 100 276

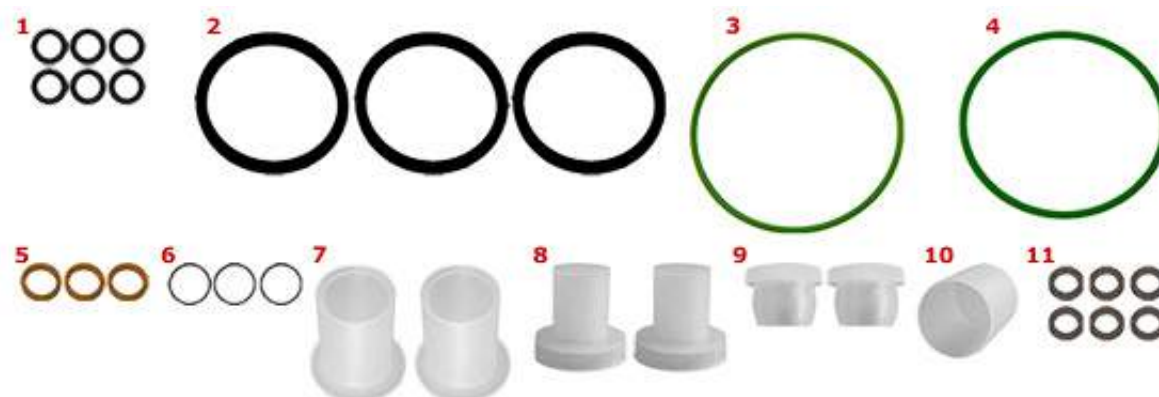
FLAG 80 1119



1. 81 0100
2. 81 1261
3. 81 1262
4. 81 1263
5. 81 1264
6. 82 0380
7. 82 0401
8. 83 0402
9. 83 0403
10. 83 0404
11. 83 0643

Repairkit for CR/CP 1 Reference F 01M 100 277

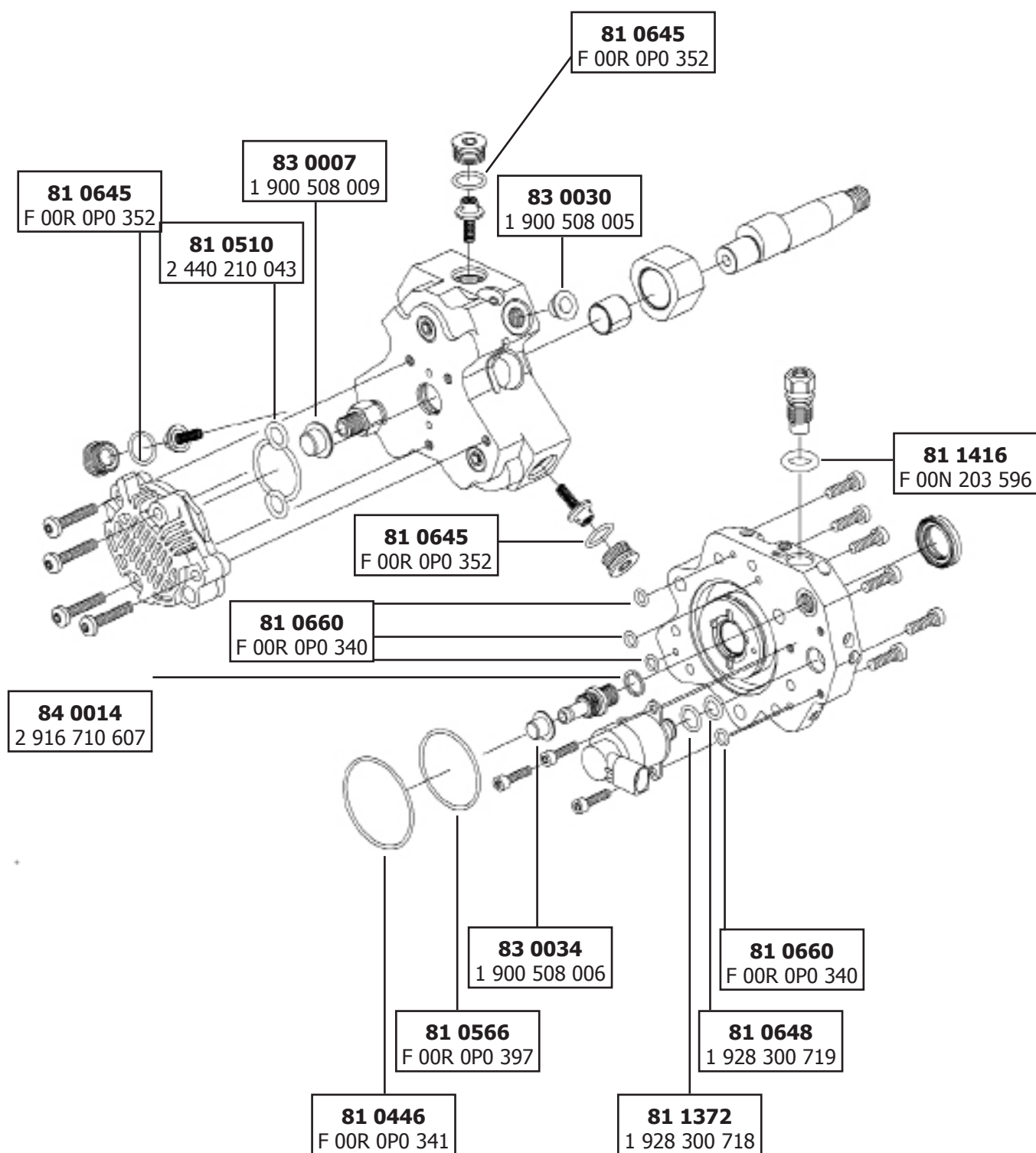
FLAG 80 1115



1. 81 0100
2. 81 1261
3. 81 1262
4. 81 1263
5. 81 1264
6. 81 1400
7. 82 0380
8. 83 0401
9. 83 0402
10. 83 0403
11. 83 0404
12. 83 0643

Bosch Common Rail

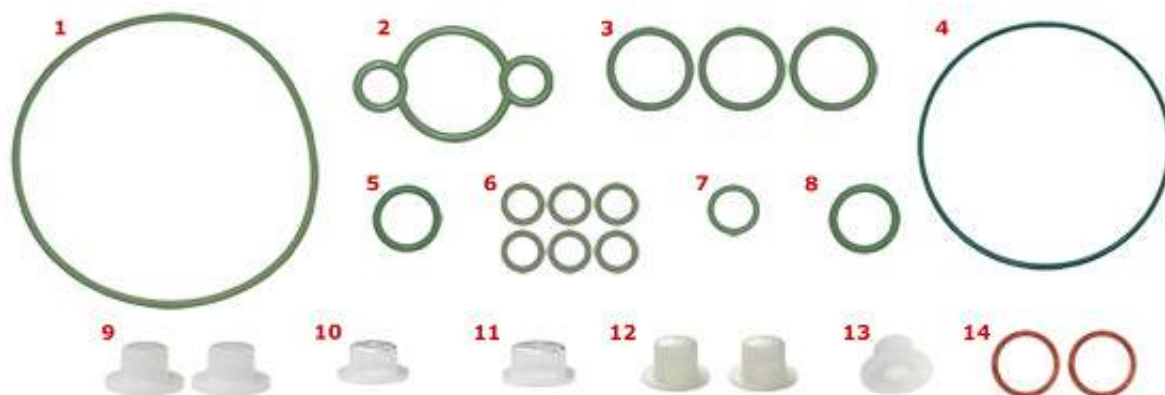
High Pressure Pump CR/CP 3



Bosch Common Rail

Repairkit for CR/CP 3 Reference F 00N 201 974

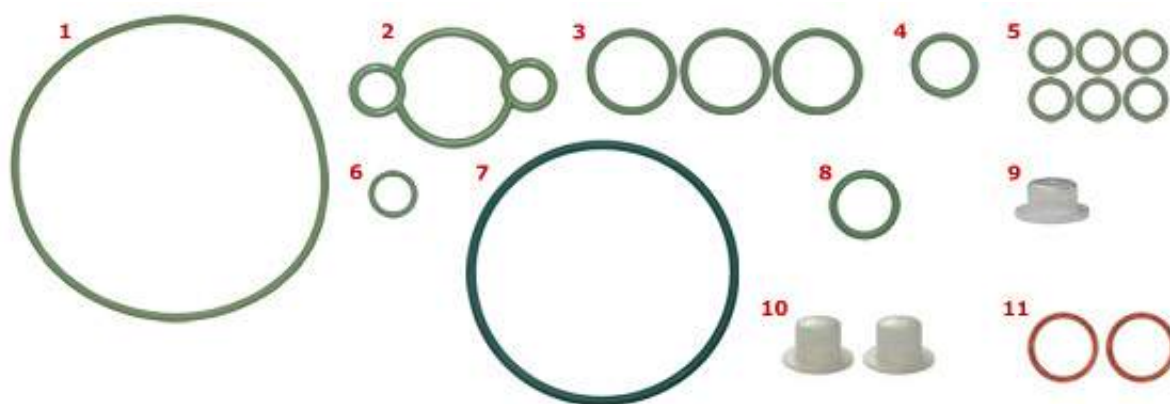
FLAG 80 1209



1. 81 0446
2. 81 0510
3. 81 0566
4. 81 0645
5. 81 0648
6. 81 0660
7. 81 0710
8. 81 1416
9. 83 0005
10. 83 0007
11. 83 0008
12. 83 0030
13. 83 0034
14. 84 0014

Repairkit for CR/CP 3 Reference F 00N 201 975

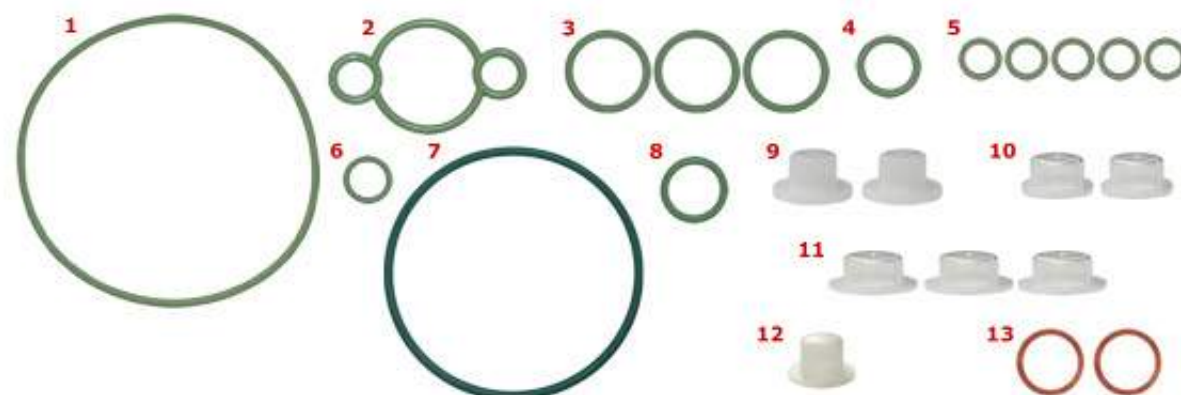
FLAG 80 1213



1. 81 0446
2. 81 0510
3. 81 0566
4. 81 0648
5. 81 0660
6. 81 0710
7. 81 0867
8. 81 1416
9. 83 0007
10. 83 0030
11. 84 0014

Repairkit for CR/CP 3 Reference F 00N 201 976

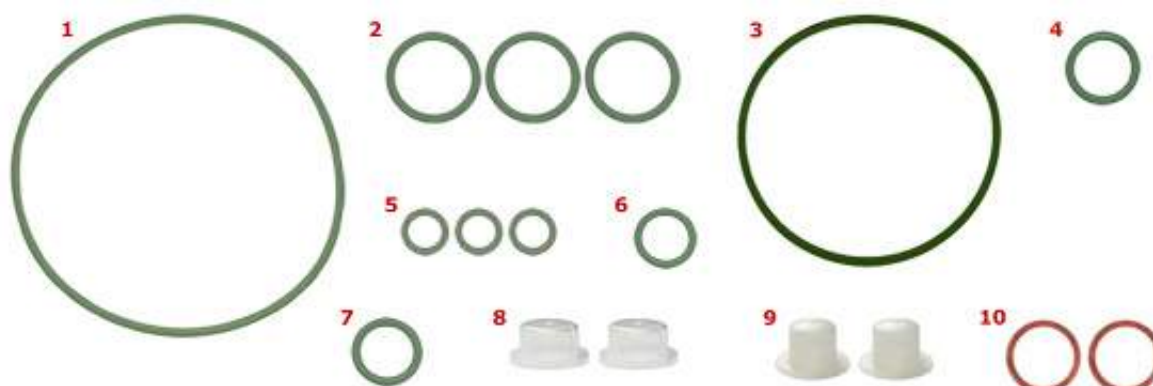
FLAG 80 1216



1. 81 0446
2. 81 0510
3. 81 0566
4. 81 0648
5. 81 0660
6. 81 0710
7. 81 0867
8. 81 1416
9. 83 0005
10. 83 0008
11. 83 0009
12. 83 0030
13. 84 0014

Repairkit for CR/CP 3 Reference F 00N 201 977

FLAG 80 1217



1. 81 0446
2. 81 0566
3. 81 0645
4. 81 0648
5. 81 0660
6. 81 0710
7. 81 1416
8. 83 0008
9. 83 0030
10. 84 0014

Bosch Common Rail

Repairkit for CR/CP 3 Reference F 00N 201 978

FLAG 80 1218

This image shows the components of repair kit F 00N 201 978. It includes: 1. Three large green O-rings; 2. One medium green O-ring; 3. Six small green O-rings arranged in two groups of three; 4. One small green O-ring; 5. One very large green O-ring; 6. One small green O-ring; 7. One white plastic cap; 8. Two white plastic caps; 9. Two red O-rings.

1. 81 0566

2. 81 0648

3. 81 0660

4. 81 0710

5. 81 0752

6. 81 1416

7. 83 0007

8. 83 0030

9. 84 0014

Repairkit for CR/CP 3 Reference F 00N 201 979

FLAG 80 1219

This image shows the components of repair kit F 00N 201 979. It includes: 1. One very large green O-ring; 2. Three medium green O-rings; 3. One small green O-ring; 4. Six small green O-rings arranged in two groups of three; 5. One small green O-ring; 6. One small green O-ring; 7. One white plastic cap; 8. Two white plastic caps; 9. Two red O-rings.

1. 81 0446

2. 81 0556

3. 81 0648

4. 81 0660

5. 81 0710

6. 81 1416

7. 83 0007

8. 83 0030

9. 84 0014

Repairkit for CR/CP 3 Reference F 00N 201 973

FLAG 80 1207

This image shows the components of repair kit F 00N 201 973. It includes: 1. One very large green O-ring; 2. Two small green O-rings; 3. Three medium green O-rings; 4. One small green O-ring; 5. Six small green O-rings arranged in two groups of three; 6. One small green O-ring; 7. One medium green O-ring; 8. One small green O-ring; 9. One white plastic cap; 10. One white plastic cap; 11. One white plastic cap; 12. One white plastic cap; 13. One white plastic cap; 14. Two red O-rings.

1. 81 0446

2. 81 0510

3. 81 0566

4. 81 0648

5. 81 0660

6. 81 0710

7. 81 0752

8. 81 1416

9. 83 0005

10. 83 0007

11. 83 0008

12. 83 0030

13. 83 0033

14. 84 0014

Repairkit for CR/CP 3 Reference F 01M 100 278

FLAG 80 1122

This image shows the components of repair kit F 01M 100 278. It includes: 1. One small green O-ring; 2. One large black O-ring; 3. One small red O-ring.

1. 81 0340

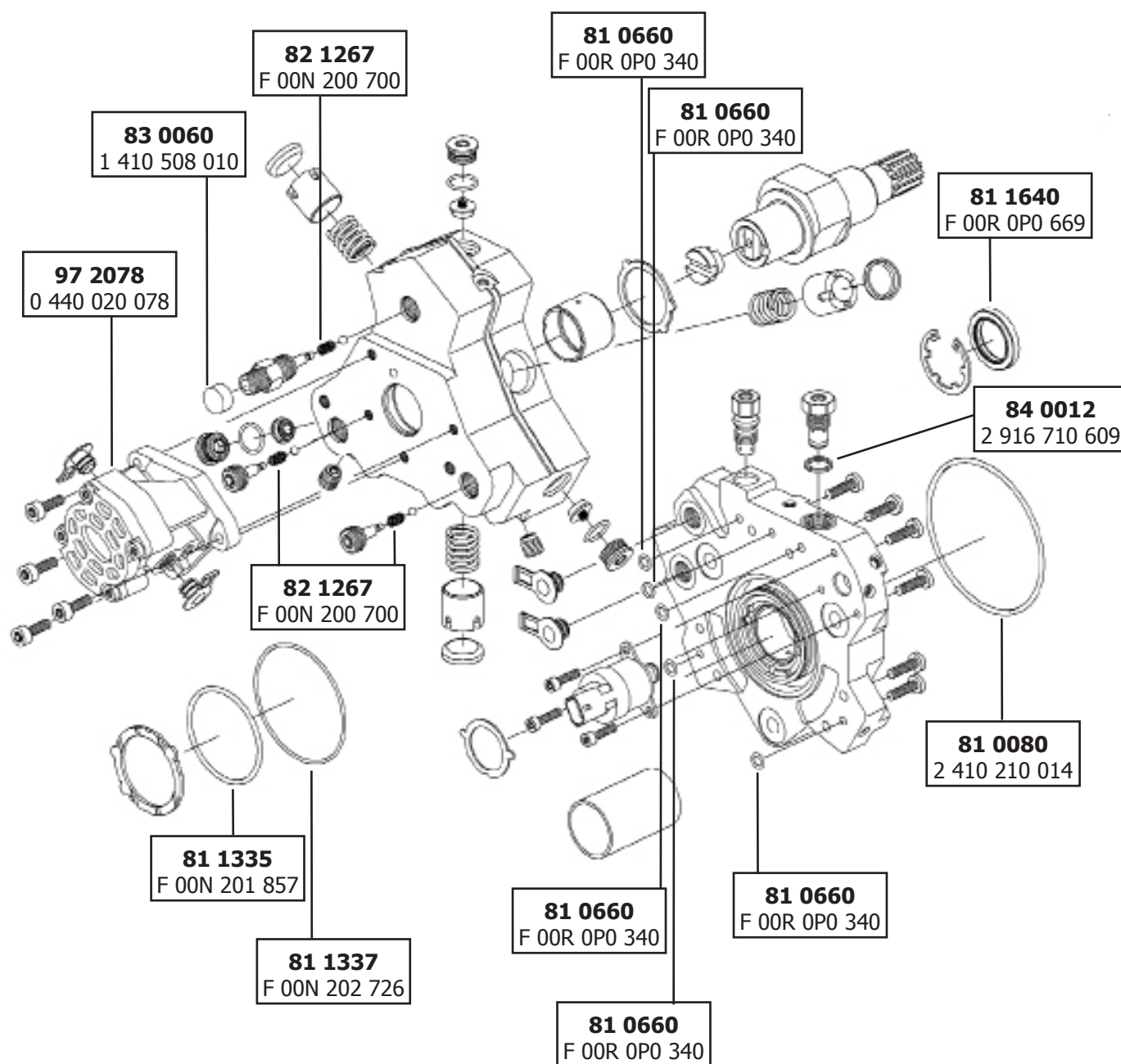
2. 83 0650

3. 83 0741

Bosch Common Rail

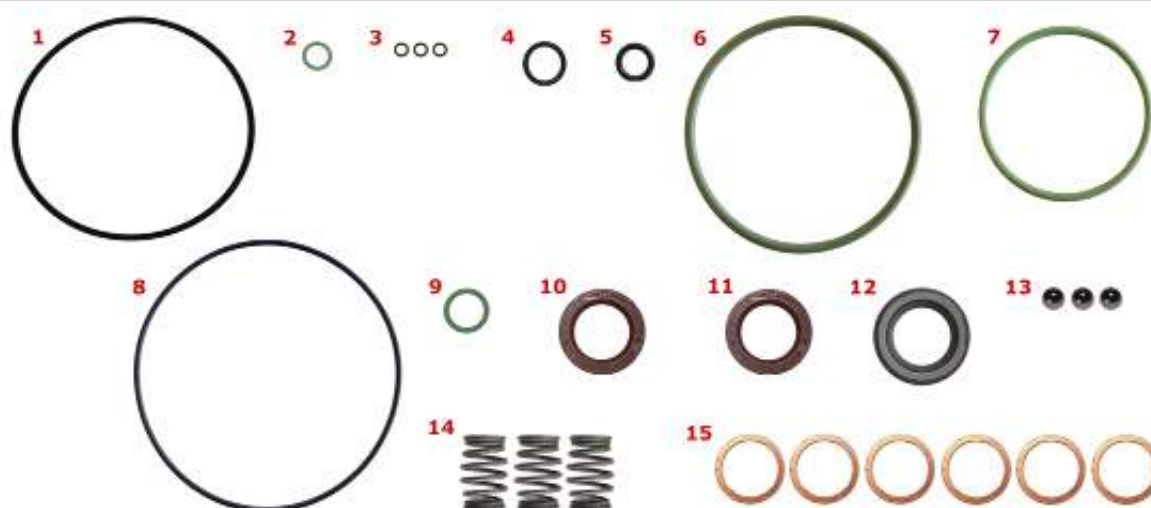
High Pressure Pump CR/CP3S3/ Reference 0 445 020 051

FLAG 03 2075



Repairkit for CR/CP 3 MAN TGA

FLAG 80 2075



1. 81 0080
2. 81 0648
3. 81 0660
4. 81 0707
5. 81 0710
6. 81 1335
7. 81 1336
8. 81 1337
9. 81 1416
10. 81 1452
11. 81 1455
12. 81 1464
13. 82 0185
14. 82 1267
15. 84 0012

Bosch Common Rail

Feed Pump for CR/CP 2 Reference 0 440 020 028 FP/ZP5V/VR1S

FLAG 97 2028



Gear Pump for CR/CP 3 Reference 0 440 020 078 FP/ZP18/R1S

FLAG 97 2078



Gear Pump for CR/CP 3 Reference 0 440 020 045 FP/ZP18/L1S

FLAG 97 2045



Gear Pump for CR/CP 3 Reference 0 440 020 049 FP/ZP18/R1S

FLAG 97 2049



Delphi Common Rail



82 1014
9308-621C



Spacer
Details see in the table



Nozzle
Details see in the table



Delphi Common Rail

Injector		Valve		Spacer		Nozzle	
							
FLAG	Reference	FLAG	Reference	FLAG	Reference	FLAG	Reference
13 0001	R00001Z	82 1014	9308-621C	82 2152	9308-613D	39 0096	L096PBD
13 0101	R00101Z	82 1014	9308-621C	82 2156	9308-617D	39 0096	L096PBD
13 0301	R00301Z	82 1014	9308-621C	82 2156	9308-617D	39 0096	L096PBD
13 0401	R00401Z	82 1014	9308-621C	82 2156	9308-617D	39 0096	L096PBD
13 0402	R00402Z	82 1014	9308-621C	82 2156	9308-617D	39 0128	L128PBD
13 0403	R00403Z	82 1014	9308-621C	82 2157	9308-617E	39 0145	L145PBD
13 0501	R00501Z	82 1014	9308-621C	82 2166	9308-617W	39 0133	L133PBD
13 0502	R00502Z	82 1014	9308-621C	82 2158	9308-617F	39 0134	L134PBD
13 0601	R00601D	82 1014	9308-621C	82 2163	9308-617P	39 0150	L150PBD
13 0901	R00901Z	82 1014	9308-621C	82 2155	9308-617C	39 0003	L097PBD
13 1001	R01001A	82 1014	9308-621C	82 2158	9308-617F	39 0109	L109PBD
13 1002	R01001D	82 1014	9308-621C	82 2166	9308-617W	39 0096	L096PBD
13 1101	R01101D	82 1014	9308-621C	82 2157	9308-617E	39 0145	L145PBD
13 1201	R01201Z	82 1014	9308-621C	82 2150	9308-606B	39 0004	L087PBD
13 1302	R01302Z	82 1014	9308-621C	82 2156	9308-617D	39 0006	L121PBD
13 1401	R01401Z	82 1014	9308-621C	82 2151	9308-613B	39 0004	L087PBD
13 1601	R01601Z	82 1014	9308-621C	82 2156	9308-617D	39 0006	L121PBD
13 1701	R01701Z	82 1014	9308-621C	82 2154	9308-617B	39 0004	L087PBD
13 1801	R01801A	82 1014	9308-621C	82 2153	9308-617A	39 0005	L120PBD
13 1901	R01901Z	82 1014	9308-621C	82 2155	9308-617C	39 0003	L097PBD
13 2101	R02101Z	82 1014	9308-621C	82 2154	9308-617B	39 0004	L087PBD
13 2201	R02201Z	82 1014	9308-621C	82 2156	9308-617D	39 0006	L121PBD
13 2301	R02301Z	82 1014	9308-621C	82 2155	9308-617C	39 0003	L097PBD
13 2401	R02401Z	82 1014	9308-621C	82 2161	9308-617K	39 0137	L137PBD
13 2501	R02501Z	82 1014	9308-621C	82 2160	9308-617J	39 0136	L136PBD
13 2601	R02601Z	82 1014	9308-621C	82 2159	9308-617H	39 0138	L138PBD
13 2801	R02801D	82 1014	9308-621C	82 2155	9308-617C	39 0003	L097PBD
13 2901	R02901D	82 1014	9308-621C	82 2161	9308-617K	39 0137	L137PBD
13 3001	R03001D	82 1014	9308-621C	82 2160	9308-617J	39 0136	L136PBD
13 3101	R03101D	82 1014	9308-621C	82 2164	9308-617Q	39 0291	L291PRD
13 3401	R03401D	82 1014	9308-621C	82 2165	9308-617R	39 0157	L157PBD
13 3601	R03601D	82 1014	9308-621C	82 2155	9308-617C	39 0003	L097PBD
13 3701	R03701D	82 1014	9308-621C	82 2161	9308-617K	39 0137	L137PBD
13 4001	R04001D	82 1014	9308-621C	82 2153	9308-617A	39 0005	L120PBD
13 4101	R04101D	82 1014	9308-621C	82 2154	9308-617B	39 0004	L087PBD
13 4601	R04601D	82 1014	9308-621C	82 2159	9308-617H	39 0138	L138PBD
13 4701	R04701D	82 1014	9308-621C	82 2165	9308-617R	39 0157	L157PBD
13 5201	R05201D	82 1014	9308-621C	82 2162	9308-617N	39 0146	L146PBD
		82 1014	9308-621C			39 0087	L087PRD
		82 1014	9308-621C			39 0146	L120PRD
		82 1014	9308-621C			39 0146	L121PRD

Delphi Common Rail

Nozzle valve kit Reference 7135-644

FLAG 80 5644



Nozzle valve kit Reference 7135-647

FLAG 80 5647



Nozzle valve kit Reference 7135-651

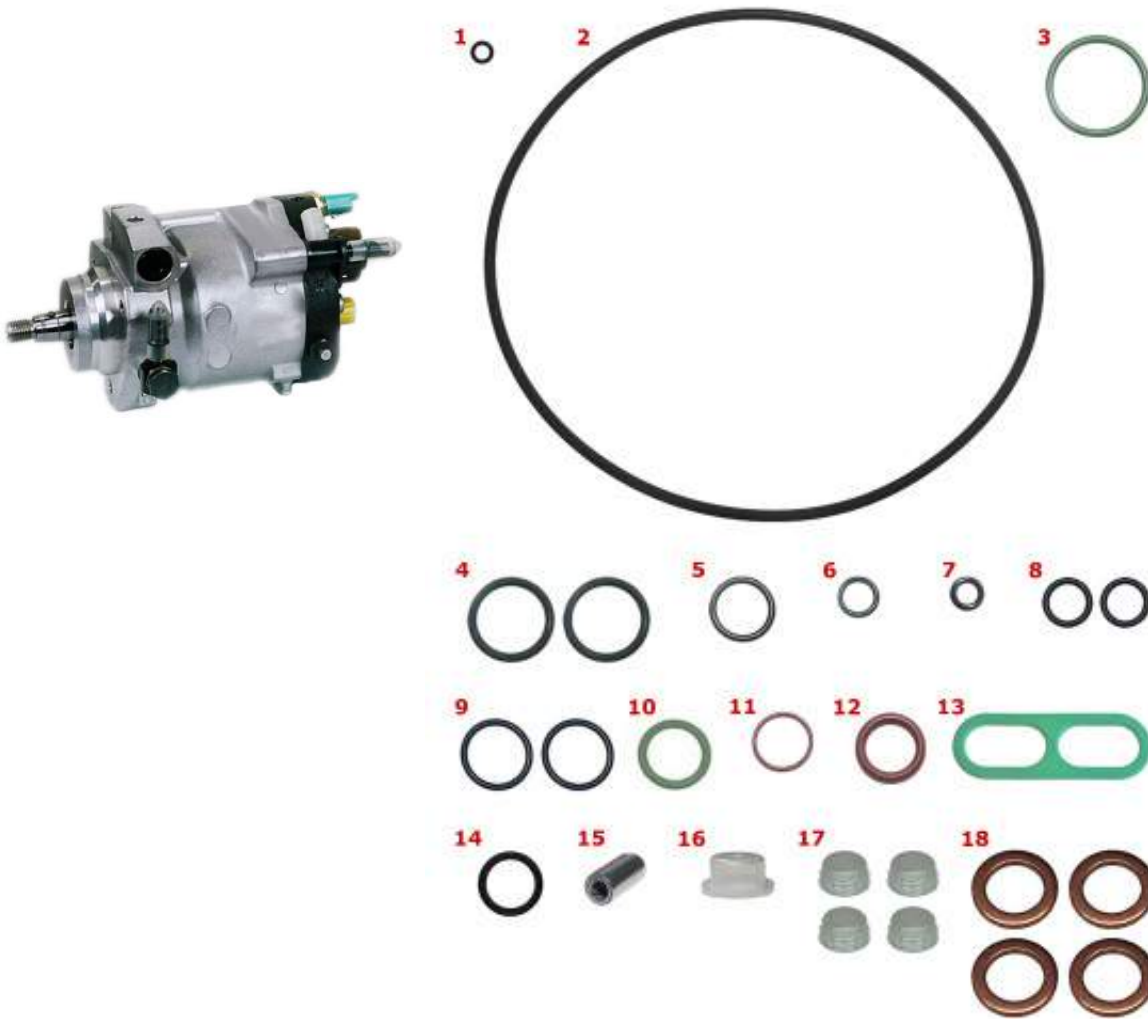
FLAG 80 5651



Delphi Common Rail

Repairkit for dpf1 Reference 7135-539

FLAG 80 1539



- 1. 81 0090
- 2. 81 0095
- 3. 81 0108
- 4. 81 0109
- 5. 81 0117
- 6. 81 0125
- 7. 81 0238
- 8. 81 0364
- 9. 81 0435
- 10. 81 0648
- 11. 81 0941
- 12. 81 1105
- 13. 81 1253
- 14. 81 1372
- 15. 82 0673
- 16. 83 0008
- 17. 83 0111
- 18. 84 0287

Repairkit for dpf1 Reference 7136-476

FLAG 80 1206



- 1. 80 0904
- 2. 82 1216

Magnetic Filters



83 0750

Reference 34 F2154

Description

Magnetic Filter with outlet flow valve. Tube Ø 6-8 mm. metallic



83 0751

Reference 34 F2155

Description

Magnetic Filter without outlet flow valve. Tube Ø 6-8 mm. metallic



83 0752

Reference 34 F2156

Description

Magnetic Filter with outlet flow valve. Tube Ø 8-10 mm. nylonfilter



83 0753

Reference 34 F2157

Description

Magnetic Filter without outlet flow valve. Tube Ø 8-10 mm. nylonfilter



83 0754

Reference 34 F2158

Description

Magnetic Filter with outlet flow valve. Tube Ø 12 mm. nylonfilter



83 0755

Reference 34 F2159

Description

Magnetic Filter without outlet flow valve. Tube Ø 12 mm. nylonfilter



83 0756

Reference 34 F2164

Description

Magnetic Filter with outlet flow valve. Tube Ø 8 mm. nylonfilter „removable“



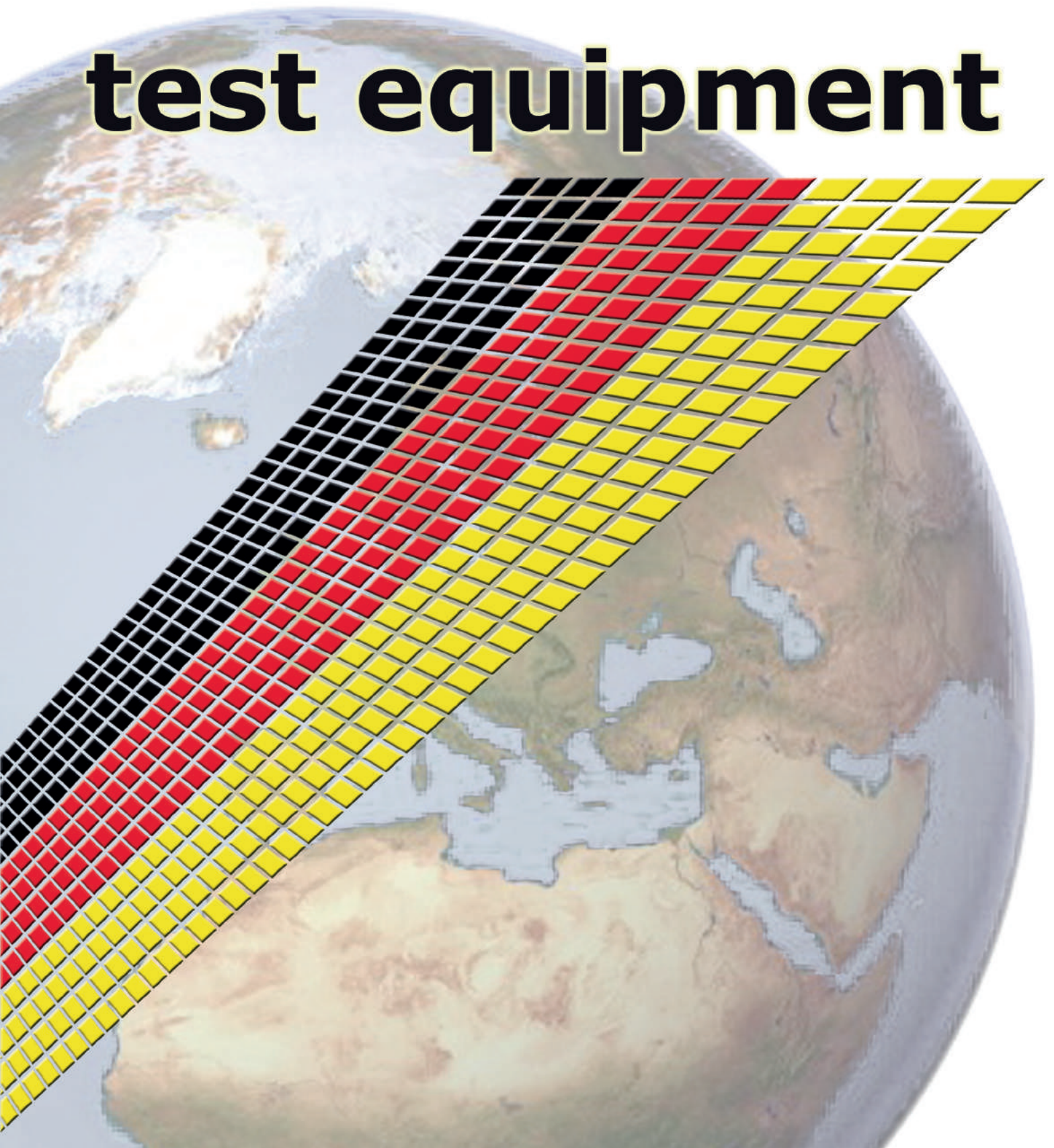
83 0757

Reference 34 F2165

Description

Magnetic Filter without outlet flow valve. Tube Ø 8 mm. nylonfilter „removable“

Tools and test equipment



Tools

Injector removal tool kit uni 6 pcs in box

FLAG 16 1210



Special Hexagon bit for Bosch CR FLAG 16 4172

Tools for Denso CR

FLAG 16 4173



Repairkit 3. Pcs. for Denso CR

FLAG 16 4174



Nut Sockets for Common Rail Injectors

1



2



3



4



Pos.	FLAG	Application	Tec. Info
1	16 4286	Denso Isuzu N-Series	27 MM
2	16 4287	Bosch 120 Serie	27 MM
3	16 4288	Bosch 110 Serie	29 MM
4	16 4290	Bosch 120 Serie	28 MM

Tools

Common Rail Test benches



Common Rail Test bench 1

FLAG 16 1000

The Testbench can be used for CR Injectors aswell as for the high pressure pump CP1 and CP3 (cars), used for Bosch, Delphi, Denso and Siemens Injectors. The setting-, parameter- and tollerance informations are available as hard copy and on CD.

Technical parameters:

supply voltage: 230 [V]/50[Hz] network grid
Maximum current: 25[A]
Drive motor power: 2,2[kW]
Drive motor revolutions: 100 to 2000[rpm]
Fuel heater power: 1700 [W]

Measurement range and accuracy:

speed of rotation: 50 to 4000[rpm]
fuel supply pressure: 0 to 0,2[MPa] (0 to 20[bar],
+/- 1% + 0,01[MPa]
fuel temperature: 0 to 100[°C], +/- 2%

Common Rail Test bench 2

FLAG 16 1001

The Testbench can be used for CR Injectors aswell as for the VE and VA pumps used for Bosch, Delphi, Denso and Siemens Injectors. Same as for Test bench 1 all technical information are available as hard copy and on CD.

Technical parameters:

supply voltage: 230 [V]/50[Hz] network grid
Maximum current: 25[A]
Drive motor power: 2,2[kW]
Drive motor revolutions: 100 to 2000[rpm]
Fuel heater power: 1700 [W]

Measurement range and accuracy:

speed of rotation: 50 to 4000[rpm]
fuel supply pressure: 0 to 0,2[MPa] (0 to 20[bar],
+/- 1% + 0,01[MPa]
fuel temperature: 0 to 100[°C], +/- 2%

Common Rail Test bench 3

FLAG 16 1002

The Testbench can be used for CR Injectors aswell as for the high pressure pump CP1 and CP3 (cars), used for Bosch, Delphi, Denso and Siemens Injectors. Test bench is fully automatically controlled by plc-system. Customized manufacturer's data are available in the System, which ensure a faultless and easy handling.

Technical parameters:

supply voltage: 230 [V]/50[Hz] network grid
Maximum current: 25[A]
Drive motor power: 2,2[kW]
Drive motor revolutions: 100 to 2000[rpm]
Fuel heater power: 1700 [W]

Measurement range and accuracy:

speed of rotation: 50 to 4000[rpm]
fuel supply pressure: 0 to 0,2[MPa] (0 to 20[bar],
+/- 1% + 0,01[MPa]
fuel temperature: 0 to 100[°C], +/- 2%

General Terms of Sale and Delivery for Export

1. Validity of the General Terms of Sale and Delivery

- a) The following General Terms of Sale and Delivery are valid for all business contacts between ourselves and our customers, including future contracts, unless specifically agreed otherwise and confirmed in writing or by telex.
- b) Any deviations from these terms which may appear on order forms or orders from customers have no validity. Such deviations are not binding to us even when they are not explicitly declared invalid by us or even when we execute a delivery on receipt of an order containing such deviations.
- c) All verbal agreements or arrangements, as well as all alterations or extensions to contracts confirmed in writing or telegraphically, require a separate written or telegraphic confirmation.
- d) All contracts with our customers are only binding when confirmed in writing or telegraphically. This confirmation may also be given at the same time as the invoice is received. Until this confirmation has been given, our offer is without obligation and not binding.
- e) The invalidation of an individual item of these General Terms of Sale and Delivery in no way affects the validity of any other item.
- f) All items which the seller offers are manufactured by the company of the seller. The seller guarantees that all items are of highest quality and precise fitting. All goods offered by the seller are goods which are offered for the purpose of being used as spare parts. Part numbers of other manufacturers are only mentioned for comparison purposes.

2. Terms of delivery

- a) Our prices are quoted in EUR. The agreed prices are based on the current purchasing prices, standard wages and salaries, customs duty, freight costs and other social costs. Should these costs increase after the contract has been confirmed, we reserve the right to raise our prices accordingly.
- b) Special packaging is accounted to cost price.
- c) We reserve the right to bill for costs incurred in producing test components together with the cost of tooling for such components.
- d) Partial shipments are permissible.
- e) Our delivery times are accurate to the best of our knowledge at the time of quotation. Call contracts and scheduled deliveries require a special delivery agreement on all cases. If a contracted delivery period is exceeded by more than 3 weeks for reasons which are our liability, the customer is entitled to withdraw the contract after a further 3 weeks period of grace.
- f) For contracts which consist of several partial shipments, the later delivery of a partial shipment does not imply any alteration in rights for the remaining shipments of the contract. For call contracts we reserve the right to purchase raw materials for the complete contract at our discretion and to manufacture the full contracted quantities for small and medium lots immediately. Any alterations made after confirmation of contract without written confirmation therefore cannot be accepted.
- g) We reserve the right to deliver within 10% above or below the contracted quantities.
- h) Returned goods can only be accepted with our prior agreement to the return.
- i) In the event of bankruptcy or insolvency, the execution of a statutory declaration (or affidavit) in accordance with § 807 ZPO, payment difficulties or the notification of a considerable depreciation in the customers pecuniary circumstances, give us the right to halt delivery immediately and to refuse to complete running contracts.

3. Risk liability

- a) All shipments are made at the customers risk.
- b) Our liability ceases as soon as the goods have been correctly delivered to the railway, carrier or transport company, or have been loaded onto our own, or the customers vehicles.
- c) If a customer does not take delivery of a shipment within a reasonable period of grace, or refuses to accept a shipment within a reasonable period of grace, or refuses to accept a shipment, or if a shipment cannot be dispatched for more than 1 month from the agreed delivery date, for reasons which are not our liability, then we are entitled to return the goods to our warehouse at the customers cost and liability. We are entitled to levy storage charges at 75% of the equivalent storage charges levied by a storage company. If the delivery or production is hindered for reasons for which we are neither responsible nor liable, for example force majeure, war or civil unrest, operational breakdowns or traffic stoppages, lack of raw materials or labour, strikes or lock-outs, whether in our plant or a supplier plant, then we are no longer bound by our liability for delivery, and we are also entitled to halt delivery without subsequent delivery period.

4. Warranty

- a) We warrant good quality and careful execution of the supplied goods for a period of 12 month from date of handing over respective goods to customer or the third party which is responsible for transportation or shipment of respective goods. This warranty exclusively comprises the lack of defects in material and workmanship for the aforementioned period. We are obliged to repair or replace defective parts for the duration of the warranty period on our own expense. Defective parts shall be sent to us by customer solely on his own costs, especially by carriage paid. Credit of the parts shall be reserved. Our warranty does not cover natural wear of components. We are not liable for damage or consequential damage caused by misuse, neglect, excessive use or failure to follow operating instructions. Our entire warranty shall expire immediately when changes or repairs are made without our written consent. Warranty claims under Section 437 German Civil Code which can be claimed in addition to the warranty liability of the supplier shall expire after one year from delivery of the goods.
- b) Claims for deficiencies or defects which are obvious must be made in writing immediately, at the latest within 10 days of receipt of the goods, accompanied by a detailed description of the deficiencies or defects.
- c) Claim for hidden defects or deficiencies must be submitted immediately upon detection, at the latest within 10 days of their discovery, together with a detailed description of the defect or deficiency.
- d) In the case of justified defect claims made within the appropriate period of grace, the goods will be either repaired or replaced at our discretion whereby excluding any further claims. If we decide to replace the goods, the defective shipment becomes our property. If justified claims are also made against the repaired or replacement goods, and if further repair or replacement is not deemed acceptable, then the customer has the right to cancel the contract or require the sale price to be reduced correspondingly. The cancellation or reduction is only applicable to those items which have been the subject of repeated justified claims. The carriage costs incurred as a result of these guarantees clauses will be carried by us. § 476 A) BGB is inadmissible.
- e) Our statements in regard to the terms and scope of delivery, application (e.g. dimensions, weight, hardness and characteristics) are purely descriptive and do not constitute guaranteed characteristics. The values quoted are intended for guidance and unless specifically agreed to the contrary, they are subject to the variations typical for such quotations in the trade. The characteristics are only considered guaranteed insofar as they have been specifically determined by us on samples for the particular customer application. Minor deviations from such samples or prior shipments, which do not detract from the usability for the projected application, are not considered as justified claims and are not subject to the warranty conditions.
- f) In particular the following cases are not subject to the guarantee: When the shipment is used for purposes other than those for which the contract was made, natural wear, incorrect handling by the customer or third parties, such as incorrect storage, storage beyond the normal store life, incorrect installation etc., defects in the component or machine in which the goods are installed (e.g. defective sealing surfaces), the use of incorrect materials, e.g. liquids to be sealed, lubricants etc..

5. Patents and protected rights

- a) All tools, samples, designs, drawings, cost estimates and similar documents, remain the unrestricted property of our company, even when the apportioned costs have been billed to the customer. Our rights of use and title are retained. We are not duty bound to retain machine tools longer than a reasonable retention period. The above mentioned items may not be made available to third parties without our express permission. Drawings and other documents which constitute a part of the contract are to be returned to us on request, in particular in those cases where we are not awarded the contract.
- b) Insofar as we have produced and delivered the contracted goods from drawings, models or samples provided by the customer, the customer is responsible for ensuring that the protected or patent rights of third parties are not contravened. If third parties prevent us manufacturing or delivering as a result of such rights, then we are entitled to stop production or delivery immediately without to clarify the legal situation and to claim damages against the customer. Independent of the above, the customer is bound to free us from all claims caused by contravention of third party protected or patent rights.

6. Retention of title

- a) We reserve the right of title to the delivered goods until all vested interests from the business association, such as interest, auxiliary claims and any legal cost incurred, including the costs of a third party notice resulting from the attachment of the goods by third parties. A seizure of the goods must be reported by the customer.
- b) If the customer falls in arrears in payment, we are entitled to reclaim the right of ownership to the delivered goods as a precaution. This claim and its execution do not constitute withdrawal from the contract, neither does a claim that the delivered goods in question be stored separately and given identification marks.
- c) The customers rights on resold or reused items from such reserved goods are already waived in our favour, together with all auxiliary rights, regardless of whether the goods have, or have not, been processed in any way or the goods have been sold to third parties, then our rights are transferred to the payments due or received from such third parties. The customer is only entitled to use the reserved goods for his normal business operations. This entitlement does not apply to cases under section 2 i)

7. Terms of payment

- a) Unless otherwise agreed, payment is due within 30 days of the date of invoice, in full without deductions.
- b) Unless otherwise agreed, the payment is automatically in arrears on the 30th day after the date on invoice (§ 294 (2) BGB). Interest at 5% above the Federal German bank rate will then be charged. We reserve the right however to make further arrears claims if necessary.
- c) Unless otherwise agreed by the customer, payments will always be made against the longest outstanding invoice, including any auxiliary claim amounts due against such invoices.
- d) Cheques and bills of exchange are only accepted in payment by prior arrangements and under consideration of all collection costs and discounts, and they are only accepted in payment.
- e) Discounting against our delivery invoices is only allowed in cases where our debt is not disputed or if such a debt has been legally awarded to the customer against us.
- f) Withholding of payment by the customers not permissible.
- g) Should the customers pecuniary circumstances decline e.g. if a letter of exchange or cheque is not honoured, or when insolvency action is taken against him, or the commencement of equity proceedings, then we are entitled to demand prepayment. At the same time all existing payments due, including those for which we have received letters of exchange, become due for payment immediately.

8. Exceptions to rights of indemnity

No rights of indemnity of any type exist against us, our legal representatives, servants, and employees, insofar as is legally possible, in particular for cases of minor negligence. It is irrelevant whether such cases are infringements of contract or auxiliary duties such as customer consultancy either verbal or in writing, infringement of obligations at the time of awarding of contract, or due to other unauthorised actions as well as damages consequent on deficiencies, damages due to delays, and any damages due to defective construction. These liability regulations apply equally to our advice, either verbal or in writing, resulting from trials or any other means. Such advice does not exempt the customer from the need to make confirmatory trials. All claims for damages made against us, regardless of legal basis and regardless of the question of responsibility, lapse 6 months after delivery of the goods, or completion of the plant or other services.

9. Data protection

We are authorized to collect and save data for the purposes of our business electronically as provided for by the regulations of the Bundesdatenschutzgesetz.

10. Applicable law

The legal relationships between ourselves and our customers are exclusively based on German laws. This applies equally to the drawing up and execution of the contracts. The provisions of UN sales of goods law will not apply.

11. Place of jurisdiction and place of delivery

- a) The place of delivery for all shipments and settlements is Schwarzenbek. The place of settlement for all payments is Schwarzenbek.
- b) Place of jurisdiction is Schwarzenbek for all letters of exchange, cheques and certifications, when the customer is the sole buyer, without damage to our right to utilize the customers local courts should we desire it.
- c) If any individual provision of these terms and conditions becomes void this will not affect the validity of the remaining provisions. The void provision will be replaced by the applicable legal provision.

Portex

34 years of success



Vehicle parts worldwide
Quality is our business

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Überwachung nach ISO 9001:2008



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