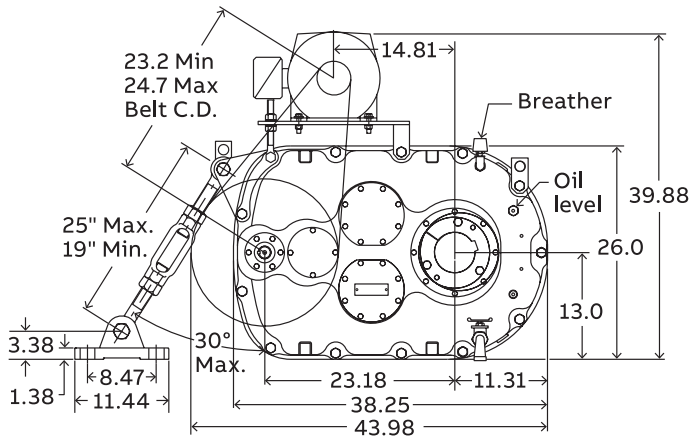


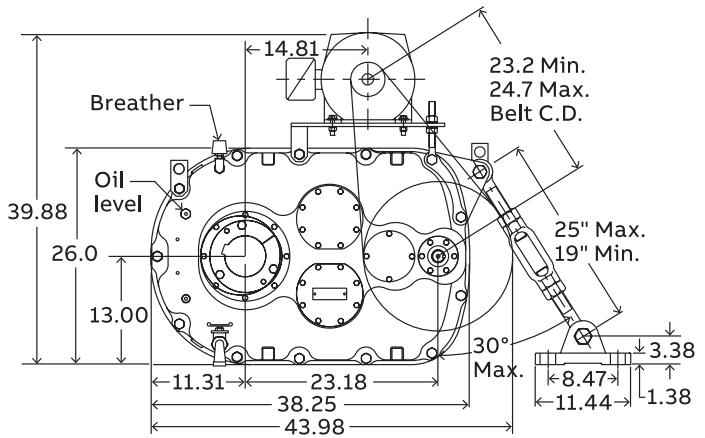
Related products

Torque-Arm shaft mount speed reducers

Dodge biological contact drive (Bio-disc) – Industrial drive for wastewater treatment



#188D L.H. Bio-disc assembly



#188D R.H. Bio-disc assembly

All dimensions are in inches.

Product specification

The speed reducer shall be either a belt driven or direct coupled enclosed shaft mount type unit with a triple reduction ratio of 170.44:1. The reducer shall mount directly on the driven shaft and utilize an adjustable Torque-Arm that attaches to the support structure or foundation.

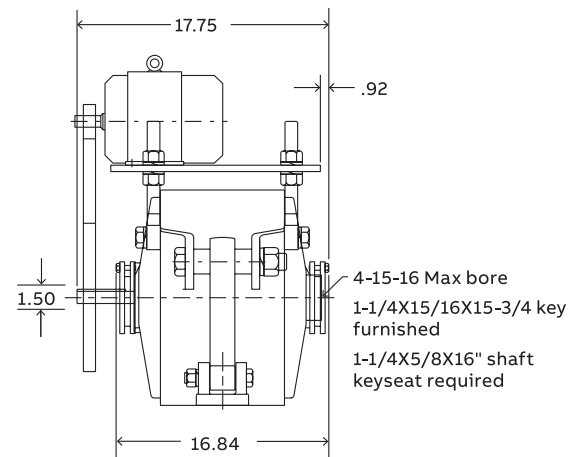
The reducer housing shall be constructed of two-piece corrosion resistant, gray iron and be ribbed for added strength. All housings shall be doweled and precision machined to assure accurate alignment for all gear sets. The reducer housing shall be painted with primer plus two (2) coats of epoxy ester enamel to minimize corrosion.

All gearing shall be of helical or spur design, and ground to provide an ellipsoid tooth to eliminate tooth end bearing and assure meshing at the strongest tooth area. All gears shall be case carburized to ensure a high surface durability with a resilient tooth core for greater impact resistance and long service life. Gears shall be supported between bearings to maintain proper alignment on gear meshes, to maximize load carrying capabilities, and eliminate overhung loads imposed on bearings. The gears shall be rated for 7-1/2 horsepower at 1.5 RPM – Class I service and 5 horsepower at 1.5 RPM - Class II Service.

All seals shall be of the lip, spring loaded type, harsh duty design

Reducer gears and bearings shall be splash lubricated using a quality petroleum base oil, containing anti-foamants and rust inhibitors. All BioDisc gearboxes are factory filled with lube.

Reducer installation shall be accomplished by using ductile iron, fully split twin-tapered bushings. The maximum and preferred bore shall be 4-15/16 inch. Reducer removal shall be accomplished by providing jack screw holes in the bushing flanges to mechanically remove the tapered assembly.



Dodge 188D Bio-disc drive products

	Part number
5 Hp Class 2.0 service factor reducer	
BioDisc drive gearbox and accessories*	259168
BioDisc V-drive kit**	BIO DR KIT
188D Universal belt guard	963763
Baldor 5 Hp, 1200 RPM, NEMA Premium Efficient, severe duty, ECP, 210 frame, TEFC motor	ECP3768T
Dodge ability sensor	750000
7.5 Hp Class 1.0 service factor reducer	
BioDisc drive gearbox and accessories*	259168
BioDisc V-drive kit**	BIO DR KIT
188D Universal belt guard	963763
Baldor 7.5 Hp, 1200 RPM, NEMA Premium Efficient, severe duty, ECP, 250 frame, TEFC motor	ECP2276T

* Includes gearbox, bushings, motor mount, tie rod, and breather

** Includes bushings, sheaves, and belt for 5 Hp and 7.5 Hp motors

Related products

Torque-Arm shaft mount speed reducers

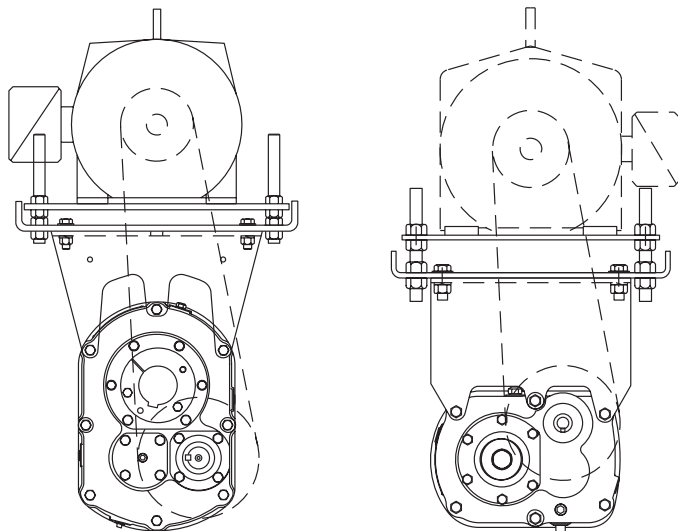
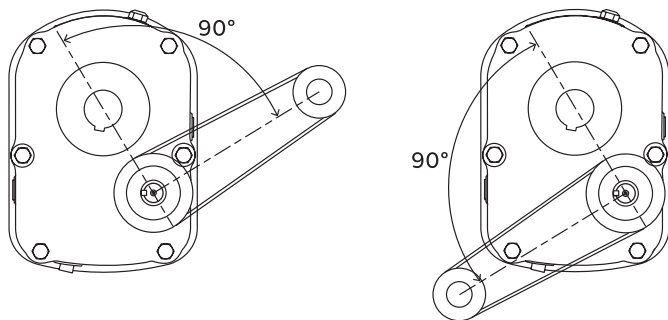
Dodge V-belt drives for Torque-Arm reducers and screw conveyor drive reducers

These are typical drives for average service conditions. For other conditions, output speeds or motor speeds, see reducer specifications for minimum driven sheave diameter and use V-belt drive selection tables.

For adequate horsepower, 3v, 5v, and 8v sheaves require 3VX, 5VX and 8VX belts; and A, B, C and D sheaves require AX, BX, CX and DX belts.

Keep driven sheave as close to reducer housing as possible.

The belt drive may be located in any convenient position. If the torque-arm is to be used to tighten the belts, the drive should be at about 90° to a line between the input and output shafts.



NEMA motor information (1750 RPM)

Horsepower	NEMA motor frame	Shaft diameter	Minimum sheave diameters
1	143T	7/8	2.20
1-1/2	145T	7/8	2.40
2	145T	7/8	2.40
3	182T	1-1/8	2.40
5	184T	1-1/8	3.00
7-1/2	213T	1-3/8	3.00
10	215T	1-3/8	3.80
15	254T	1-5/8	4.40
20	256T	1-5/8	4.40
25	284T	1-7/8	4.40
30	286T	1-7/8	5.20
40	324T	2-1/8	6.00
50	326T	2-1/8	6.80
60	364T	2-3/8	7.40
75	365T	2-3/8	8.60
100	+ 405T	2-7/8	8.60
125	+ 444T	3-3/8	10.50
150	+ 445T	3-3/8	10.50
200	+ 447T	3-3/8	13.20

+ Energy efficient (TEFC-XE) frame

Minimum sheave diameters for Dodge Torque-Arm reducers

TXT, SCXT reducer	Single reduction		Double reduction			
	Shaft diameter	5:1	Shaft diameter	9:1	15:1	25:1
1	1-1/8	4.00	3/4	4.0	3.0	3.0
2	1-7/16	3.00	1-1/8	5.0	3.0	3.0
3	1-5/8	7.00	1-1/4	5.0	4.0	4.0
4	1-15/16	7.50	1-7/16	6.5	4.6	4.6
5	2-3/16	9.50	1-15/16	7.0	5.4	5.4
6	2-3/16	6.50	2-3/16	7.0	6.2	6.2
7	2-7/16	7.50	2-7/16	7.0	6.2	6.2
8	2-7/16	9.20	2-7/16	-	6.2	6.2
9	2-7/16	9.50	2-7/16	-	8.0	8.0
10	-	-	2-11/16	-	8.5	8.5
12	-	-	2-11/16	-	9.5	9.5
13	-	-	2-15/16	-	-	12.0
14	-	-	2-15/16	-	-	15.0
15	-	-	3-7/16	-	-	20.0

Related products

Torque-Arm shaft mount speed reducers
Nominal sheave ratios

Nominal sheave ratios required for Dodge Torque-Arm reducers

Reducer output RPM	5:1 Nominal reducer			Reducer output RPM	9:1 Nominal reducer			Reducer output RPM	15:1 Nominal reducer			Reducer output RPM	25:1 Nominal reducer		
	Ratio				Ratio				Ratio				Ratio		
	1750	1450	1170		1750	1450	1170		1750	1450	1170		1750	1450	1170
400.00	1.14	1.38	1.71	200.00	1.03	1.24	1.54	120.00	1.03	1.24	1.54	76.00	1.09	1.31	1.62
395.00	1.13	1.36	1.69	198.00	1.02	1.23	1.52	118.00	1.01	1.22	1.51	74.00	1.06	1.28	1.58
390.00	1.11	1.34	1.67	196.00	1.01	1.22	1.51	116.00	1.01	1.20	1.49	72.00	1.03	1.24	1.54
385.00	1.10	1.33	1.65	194.00	1.00	1.20	1.49	114.00	1.02	1.18	1.46	70.00	1.00	1.21	1.50
380.00	1.09	1.31	1.62	192.00	1.01	1.19	1.48	112.00	1.04	1.16	1.44	68.00	1.03	1.17	1.45
375.00	1.07	1.29	1.60	190.00	1.02	1.18	1.46	110.00	1.06	1.14	1.41	66.00	1.06	1.14	1.41
370.00	1.06	1.28	1.58	188.00	1.03	1.17	1.45	108.00	1.08	1.12	1.38	64.00	1.09	1.10	1.37
365.00	1.04	1.26	1.56	186.00	1.05	1.15	1.43	106.00	1.10	1.10	1.36	62.00	1.13	1.07	1.32
360.00	1.03	1.24	1.54	184.00	1.06	1.14	1.42	104.00	1.12	1.08	1.33	60.00	1.17	1.03	1.28
355.00	1.01	1.22	1.52	182.00	1.07	1.13	1.40	102.00	1.14	1.06	1.31	58.00	1.21	1.00	1.24
350.00	1.00	1.21	1.50	180.00	1.08	1.12	1.38	100.00	1.17	1.03	1.28	56.00	1.25	1.04	1.20
345.00	1.01	1.19	1.47	178.00	1.09	1.10	1.37	98.00	1.19	1.01	1.26	54.00	1.30	1.07	1.15
340.00	1.03	1.17	1.45	176.00	1.10	1.09	1.35	96.00	1.22	1.01	1.23	52.00	1.35	1.12	1.11
335.00	1.04	1.16	1.43	174.00	1.12	1.08	1.34	94.00	1.24	1.03	1.21	50.00	1.40	1.16	1.07
330.00	1.06	1.14	1.41	172.00	1.13	1.07	1.32	92.00	1.27	1.05	1.18	48.00	1.46	1.21	1.03
325.00	1.08	1.12	1.39	170.00	1.14	1.06	1.31	90.00	1.30	1.07	1.15	46.00	1.52	1.26	1.02
320.00	1.09	1.10	1.37	168.00	1.16	1.04	1.29	88.00	1.33	1.10	1.13	44.00	1.59	1.32	1.06
315.00	1.11	1.09	1.35	166.00	1.17	1.03	1.28	86.00	1.36	1.12	1.10	42.00	1.67	1.38	1.11
310.00	1.13	1.07	1.32	164.00	1.19	1.02	1.26	84.00	1.39	1.15	1.08	40.00	1.75	1.45	1.17
305.00	1.15	1.05	1.30	162.00	1.20	1.01	1.25	82.00	1.42	1.18	1.05	38.00	1.84	1.53	1.23
300.00	1.17	1.03	1.28	160.00	1.22	1.01	1.23	80.00	1.46	1.21	1.03	36.00	1.94	1.61	1.30
295.00	1.19	1.02	1.26	158.00	1.23	1.02	1.22	78.00	1.50	1.24	1.00	34.00	2.06	1.71	1.38
290.00	1.21	1.00	1.24	156.00	1.25	1.03	1.20	76.00	1.54	1.27	1.03	32.00	2.19	1.81	1.46
285.00	1.23	1.02	1.22	154.00	1.26	1.05	1.18	74.00	1.58	1.31	1.05	30.00	2.33	1.93	1.56
280.00	1.25	1.04	1.20	152.00	1.28	1.06	1.17	72.00	1.62	1.34	1.08	28.00	2.50	2.07	1.67
275.00	1.27	1.05	1.18	150.00	1.30	1.07	1.15	70.00	1.67	1.38	1.11	26.00	2.69	2.23	1.80
270.00	1.30	1.07	1.15	148.00	1.31	1.09	1.14	68.00	1.72	1.42	1.15	24.00	2.92	2.42	1.95
265.00	1.32	1.09	1.13	146.00	1.33	1.10	1.12	66.00	1.77	1.46	1.18	22.00	3.18	2.64	2.13
260.00	1.35	1.12	1.11	144.00	1.35	1.12	1.11	64.00	1.82	1.51	1.22	20.00	3.50	2.90	2.34
255.00	1.37	1.14	1.09	142.00	1.37	1.13	1.09	62.00	1.88	1.56	1.26	18.00	3.89	3.22	2.60
250.00	1.40	1.16	1.07	140.00	1.39	1.15	1.08	60.00	1.94	1.61	1.30	16.00	4.38	3.63	2.93
245.00	1.43	1.18	1.05	138.00	1.41	1.17	1.06	58.00	2.01	1.67	1.34	14.00	5.00	4.14	3.34
240.00	1.46	1.21	1.03	136.00	1.43	1.18	1.05	56.00	2.08	1.73	1.39	12.00	5.83	4.83	3.90
235.00	1.49	1.23	1.00	134.00	1.45	1.20	1.03	54.00	2.16	1.79	1.44	10.00	7.00	5.80	4.68
230.00	1.52	1.26	1.02	132.00	1.47	1.22	1.02	52.00	2.24	1.86	1.50	8.00	8.75	7.25	5.85
225.00	1.56	1.29	1.04	130.00	1.50	1.24	1.00	50.00	2.33	1.93	1.56	6.00	11.67	9.67	7.80
220.00	1.59	1.32	1.06	128.00	1.52	1.26	1.02	48.00	2.43	2.01	1.63	-	-	-	-
215.00	1.63	1.35	1.09	126.00	1.54	1.28	1.03	46.00	2.54	2.10	1.70	-	-	-	-
210.00	1.67	1.38	1.11	124.00	1.57	1.30	1.05	44.00	2.65	2.20	1.77	-	-	-	-
205.00	1.71	1.41	1.14	122.00	1.59	1.32	1.07	42.00	2.78	2.30	1.86	-	-	-	-
200.00	1.75	1.45	1.17	120.00	1.62	1.34	1.08	40.00	2.92	2.42	1.95	-	-	-	-

Related products

Torque-Arm shaft mount speed reducers
Nominal sheave ratios

Nominal sheave ratios required for Dodge Torque-Arm reducers

Reducer output RPM	5:1 Nominal reducer			Reducer output RPM	9:1 Nominal reducer			Reducer output RPM	15:1 Nominal reducer			Reducer output RPM	25:1 Nominal reducer		
	Ratio				Ratio				Ratio				Ratio		
	Motor speed				Motor speed				Motor speed				Motor speed		
	1750	1450	1170		1750	1450	1170		1750	1450	1170		1750	1450	1170
195.00	1.79	1.49	1.20	118.00	1.65	1.37	1.10	38.00	3.07	2.54	2.05	-	-	-	-
190.00	1.84	1.53	1.23	116.00	1.68	1.39	1.12	36.00	3.24	2.69	2.17	-	-	-	-
185.00	1.89	1.57	1.26	114.00	1.71	1.41	1.14	34.00	3.43	2.84	2.29	-	-	-	-
180.00	1.94	1.61	1.30	112.00	1.74	1.44	1.16	32.00	3.65	3.02	2.44	-	-	-	-
175.00	2.00	1.66	1.34	110.00	1.77	1.46	1.18	30.00	3.89	3.22	2.60	-	-	-	-
170.00	2.06	1.71	1.38	108.00	1.80	1.49	1.20	28.00	4.17	3.45	2.79	-	-	-	-
165.00	2.12	1.76	1.42	106.00	1.83	1.52	1.23	26.00	4.49	3.72	3.00	-	-	-	-
160.00	2.19	1.81	1.46	104.00	1.87	1.55	1.25	24.00	4.86	4.03	3.25	-	-	-	-
155.00	2.26	1.87	1.51	102.00	1.91	1.58	1.27	22.00	5.30	4.39	3.55	-	-	-	-
150.00	2.33	1.93	1.56	100.00	1.94	1.61	1.30	20.00	5.83	4.83	3.90	-	-	-	-
145.00	2.41	2.00	1.61	-	-	-	-	18.00	6.48	5.37	4.33	-	-	-	-
140.00	2.50	2.07	1.67	-	-	-	-	16.00	7.29	6.04	4.88	-	-	-	-
135.00	2.59	2.15	1.73	-	-	-	-	14.00	8.33	6.90	5.57	-	-	-	-
130.00	2.69	2.23	1.80	-	-	-	-	12.00	9.72	8.06	6.50	-	-	-	-
125.00	2.80	2.32	1.87	-	-	-	-	10.00	11.67	9.67	7.80	-	-	-	-
120.00	2.92	2.42	1.95	-	-	-	-	-	-	-	-	-	-	-	-
115.00	3.04	2.52	2.03	-	-	-	-	-	-	-	-	-	-	-	-
110.00	3.18	2.64	2.13	-	-	-	-	-	-	-	-	-	-	-	-
105.00	3.33	2.76	2.23	-	-	-	-	-	-	-	-	-	-	-	-
100.00	3.50	2.90	2.34	-	-	-	-	-	-	-	-	-	-	-	-

Speed Increase Ratios are shown in bold type

Table of Contents & Reference Guide

Related products

Torque-Arm shaft mount speed reducers

Nominal sheave speed (RPM) at input for Dodge reducers – 1750 motor

Nominal sheave speed (RPM) at input for Dodge reducers 1750 RPM motor

Reducer output RPM	5:1	Reducer output RPM	9:1	Reducer output RPM	15:1	Reducer output RPM	25:1
	Nominal reducer ratio		Nominal reducer ratio		Nominal reducer ratio		Nominal reducer ratio
400.00	2000	200.00	1800	120.00	1800	76.00	1900
395.00	1975	198.00	1782	118.00	1770	74.00	1850
390.00	1950	196.00	1764	116.00	1740	72.00	1800
385.00	1925	194.00	1746	114.00	1710	70.00	1750
380.00	1900	192.00	1728	112.00	1680	68.00	1700
375.00	1875	190.00	1710	110.00	1650	66.00	1650
370.00	1850	188.00	1692	108.00	1620	64.00	1600
365.00	1825	186.00	1674	106.00	1590	62.00	1550
360.00	1800	184.00	1656	104.00	1560	60.00	1500
355.00	1775	182.00	1638	102.00	1530	58.00	1450
350.00	1750	180.00	1620	100.00	1500	56.00	1400
345.00	1725	178.00	1602	98.00	1470	54.00	1350
340.00	1700	176.00	1584	96.00	1440	52.00	1300
335.00	1675	174.00	1566	94.00	1410	50.00	1250
330.00	1650	172.00	1548	92.00	1380	48.00	1200
325.00	1625	170.00	1530	90.00	1350	46.00	1150
320.00	1600	168.00	1512	88.00	1320	44.00	1100
315.00	1575	166.00	1494	86.00	1290	42.00	1050
310.00	1550	164.00	1476	84.00	1260	40.00	1000
305.00	1525	162.00	1458	82.00	1230	38.00	950
300.00	1500	160.00	1440	80.00	1200	36.00	900
295.00	1475	158.00	1422	78.00	1170	34.00	850
290.00	1450	156.00	1404	76.00	1140	32.00	800
285.00	1425	154.00	1386	74.00	1110	30.00	750
280.00	1400	152.00	1368	72.00	1080	28.00	700
275.00	1375	150.00	1350	70.00	1050	26.00	650
270.00	1350	148.00	1332	68.00	1020	24.00	600
265.00	1325	146.00	1314	66.00	990	22.00	550
260.00	1300	144.00	1296	64.00	960	20.00	500
255.00	1275	142.00	1278	62.00	930	18.00	450
250.00	1250	140.00	1260	60.00	900	16.00	400
245.00	1225	138.00	1242	58.00	870	14.00	350
240.00	1200	136.00	1224	56.00	840	12.00	300
235.00	1175	134.00	1206	54.00	810	10.00	250
230.00	1150	132.00	1188	52.00	780	8.00	200
225.00	1125	130.00	1170	50.00	750	6.00	150
220.00	1100	128.00	1152	48.00	720	-	-
215.00	1075	126.00	1134	46.00	690	-	-
210.00	1050	124.00	1116	44.00	660	-	-
205.00	1025	122.00	1098	42.00	630	-	-
200.00	1000	120.00	1080	40.00	600	-	-
195.00	975	118.00	1062	38.00	570	-	-
190.00	950	116.00	1044	36.00	540	-	-
185.00	925	114.00	1026	34.00	510	-	-
180.00	900	112.00	1008	32.00	480	-	-
175.00	875	110.00	990	30.00	450	-	-
170.00	850	108.00	972	28.00	420	-	-
165.00	825	106.00	954	26.00	390	-	-
160.00	800	104.00	936	24.00	360	-	-
155.00	775	102.00	918	22.00	330	-	-
150.00	750	100.00	900	20.00	300	-	-
145.00	725	-	-	18.00	270	-	-
140.00	700	-	-	16.00	240	-	-
135.00	675	-	-	14.00	210	-	-
130.00	650	-	-	12.00	180	-	-
125.00	625	-	-	10.00	150	-	-
120.00	600	-	-	-	-	-	-
115.00	575	-	-	-	-	-	-
110.00	550	-	-	-	-	-	-
105.00	525	-	-	-	-	-	-
100.00	500	-	-	-	-	-	-

Motorized Torque-Arm II

Torque-Arm II

Torque-Arm

Engineering

Bulk Material Handling

Part Number Index

Related products

Torque-Arm shaft mount speed reducers
Protection plan

Pre-packaged rebuild kits for TXT, SCXT & Torque-Arm II reducers

Dodge Torque-Arm reducers are designed to achieve optimum service life from all components. Wear does occur over the service life of a reducer, particularly to bearings and seals. To rebuild Dodge Torque-Arm reducers to factory tolerances and specifications, use only genuine Dodge replacement parts.

Preventive actions such as scheduled maintenance and on-site inventory of Torque-Arm Level 1 or Level 2 rebuild kits are recommended to minimize the cost of down time. Having replacement parts available before they are needed contributes to a quick return of the machine to productivity. Unexpected machine downtime usually means loss of productivity.

Consider:

- Time to diagnose and order replacement parts
- Time waiting for parts to arrive

Each rebuild kit is assigned a unique part number based on reducer size and ratio making selection easy. Kits components are packaged individually and marked for easy identification. Individual components are then over packed and shipped in one clearly marked container that can be dedicated to a specific reducer.

Dodge rebuild kits offer protection and economy. Pricing is structured to offer savings over the purchase of individual components.

Level 1 Kit Includes:

- Input & output Seals
- Complete set of bearings
- Shim kit
- Gearcase sealant
- Instruction manual

Level 2 Kit Includes:

- 1st stage input shaft with pinion
- 1st stage mating gear
- Input & output seals
- Complete set of bearings
- Shim kit
- Gearcase sealant
- Instruction manual

Log on to ptplace.com to locate your nearest authorized key parts distributor.

Rebuild kit accessories are available for order (not included in kit).



Lubricant:

It is important that a rebuilt reducer be refilled with fresh lubricant of the proper viscosity group.

To make this an easy selection we have prepackaged the required volume of factory standard lubricant which may be ordered along with the rebuild kit. See Accessory table for kit part numbers.



Paint – Touch up

To restore damaged paint following the rebuild you may order Dodge **part number 810001** on PTPlace. This is a 12 oz aerosol spray can of factory original Reliance blue-green paint.