

CYLINDER HEAD RECONDITIONING EQUIPMENT



REPPLUGS - (LARGE) TAPERED, THREADED (IRON)

Manufactured from material compatible with the cylinder block or head.



Part No. 960038 H RepPlug



Part No. 960034 D RepPlug



Part No. 960033 C RepPlug



Part No. 960037 G RepPlug



Part No. 960032 B RepPlug



Part No. 960031 A RepPlug



Part No. 960035 E RepPlug



Part No. 960161 PA RepPlug

Large plugs used with special tooling for diesel head repairs. These actual size reproductions of the range of standard plugs indicate the scope of the crack repair process. Using the larger plugs, whole injector seating areas can be renewed, and the smaller plugs are widely used in automotive cylinder head and block repair.

Also available upon request, special 'J' Plugs Part No's. 960060, 960061 and 960062, and special 'K' Plugs Part No. 960063 and Part No. 960064

Repplugs - tapered, threaded (iron)

Plug No.	Size	Qty in pack	Diameter top		Diameter point		Length		Drill size		Tap no.
			inches	mm	inches	mm	inches	mm	inches	mm	
960031	A	100	21/64	15/64	15/64	5.95	1-5/16	33.34	13/64	5.15	960051
960032	B	50	27/64	21/64	21/64	8.33	11/2	38.10	5/16	7.93	960052
960033	C	25	33/64	27/64	27/64	10.71	11/2	38.10	25/64	9.92	960053
960034	D	25	39/64	31/64	31/64	12.30	11/2	38.10	15/32	11.90	960054
960035	E	12	21/32	19/32	19/32	15.08	15/16	23.81	9/16	14.28	960055
960037	G		27/32	25/32	25/32	19.84	15/16	23.81	23/32	18.25	960057
960038	H		1-5/32	1-3/32	1-3/32	27.87	15/16	23.81	1	25.40	960058

Repplugs - tapered, plain (iron)

Plug No.	Size	Qty in pack	Diameter top		Diameter point		Length		Drill size		Tap no.
			inches	mm	inches	mm	inches	mm	inches	mm	
960161	PA	25	.265	6.72	.203	5.15	1	25.340	3/16	4.76	960171

THE CRACK REPAIR PROCESS

A crack (see figure 1) occurs when a material yields to tensile stresses. After the material cracks in an engine, expansion and contraction caused by heating and cooling keep the crack moving, making it difficult to seal.

If a crack can be prevented from moving it can be sealed.

This unique process repairs cracks without the use of heat or welding.

It also builds in an added resistance to further cracking in the same area. In the process, a threaded, tapered plug is used to immobilise the crack and exert an outward force which induces a slight compressive stress (See Figure 2) where a tensile stress existed before. The thread on the plug prevents the crack from moving in an axial direction.

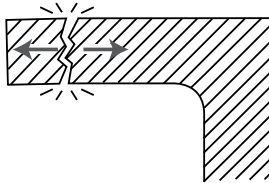


Figure 1

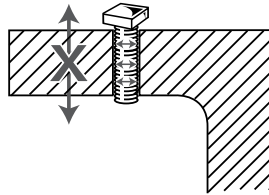
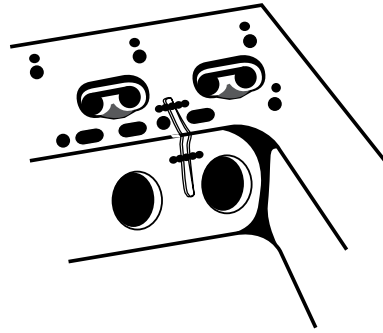


Figure 2



TAPER TAPS

Tap No.	Size	To suit plug no.	Drill size (inches)	Drill size (mm)
960051	A	960001, 960021, 960031	13/64	5.75
960052	B	960002, 960032	5/16	7.93
960053	C	960033	25/64	9.92
960054	D	960034	15/32	11.90
960055	E	960035	9/16	14.28
960057	G	960037	23/32	16.25
960058	H	960038	1	25.40



DYE PENETRANT CRACK DETECTION KIT

Detects cracks in a wide range of ferrous, non-ferrous and many plastic materials. The aerosols are simple to use and completely portable. Applicable to the aircraft, automotive and industrial fields. Suitable for testing conrods, crankshafts, stub axles and many other critical components. For owners of ultraviolet lamps a fluorescent kit is available Part No. 960519. Kit components are also available in 4.546 litres (1 gallon) non-aerosol packs for larger users.



Part No.	Includes Part No.	Type	Weight
960270	960271	1 only 340g (12 fl. oz.) aerosol can detection penetrant	2.27kg (5 lbs.)
	960272	1 only 340g (12 fl. oz.) aerosol can detection developer	
	960273	2 only 340g (12 fl. oz.) aerosol can detection remover	
		Set of operating instructions	

Valve seat reconditioning

Syncro seating process

Syncro seating for improved power & performance

Syncro seating equipment provides a means of producing a fine finish on the valve seat grinding wheel at precisely the same angle as the valve face for the final seat honing operation. For the preliminary seat grinding operation, the wheel is dressed with a diamond point, but for the honing of the seat, the valve seat wheel is ground against the valve refacing machine wheel. This can be effectively achieved only because the syncro seating pilots are locked into the grinding wheel carrier to form an abrasive valve assembly, which can be readily held in the valve refacer collet. By using the valve refacer to produce a fine finish and the correct angle on the valve seat grinding wheel incorporated in the abrasive valve assembly, the process of lapping can be largely eliminated.

Features of the syncro pilot:

- Precision ground parallel to fit into valve guides
- Locks into carrier to make an abrasive valve assembly
- Vibro action of the carrier ensures automatic alignment of the seat to the guide
- Quickly moved from one guide to the next
- Extensive range of diameters available

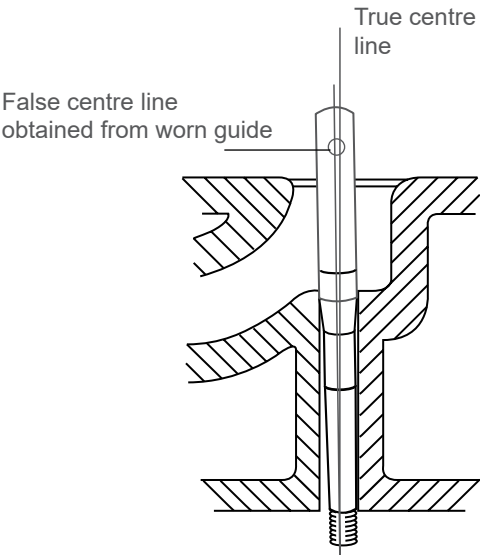
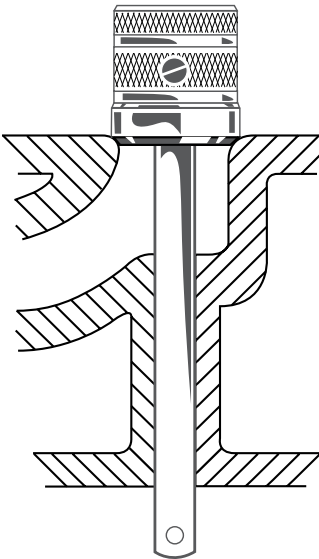
The time factor involved in positioning tapered and expanding type pilots in the guide is far in excess of that required to place the syncro pilot in position. Misalignment of the seat with the guide can be experienced due to valve guide wear when using a tapered or expanding type pilot. The neat fitting syncro pilot automatically aligns the valve seat grinding wheel at right angles to the centre line of the valve guide. If the seat is not at the correct angle, the head of the valve is forced to deflect when it is pulled down onto the seat by the valve spring. This condition contributes to valve heads breaking off as the valve rotates.

Series 126000 and 128000 have a shank diameter of 9.52mm (3/8") for use with carrier Part No. 151100 or reamer arbour Part No. 143500

Stock range listing of syncro pilots:

Diameter	mm	Part No.
.216	5.49	126216
.235	5.97	126235
.248	6.30	126248
.256	6.50	126256
.274	6.96	126274
.276	7.01	126276
.279	7.08	126279
.310	7.87	126310
.312	7.92	126312
.314	7.98	126314
.315	8.00	126315
.317	8.05	126317
.325	8.25	126325
.333	8.46	126333
.340	8.64	126340

Diameter	mm	Part No.
.342	8.69	126342
.343	8.71	126343
.345	8.76	126345
.346	8.79	126346
.352	8.94	126352
.358	9.09	126358
.371	9.42	126371
.373	9.47	126373
.375	9.53	126375
.378	9.60	126378
.385	9.78	126385
.396	10.06	126396
.433	11.00	126433
.436	11.07	126436



INSERT REMOVING CHISEL



This high-tensile, heat-treated chisel is fused to remove valve seat inserts. The chisel is first driven under the insert, then hit on top with a hammer which raises the insert out of its seat.

Part No.
136000

VALVE SEAT RECONDITIONING - SYNCRO SEATING

For automotive use

Part No.	Description	Dimensions	Weight
150092	Valve seat reconditioning - syncro seating	270 x 220 x 200mm	11.3kg

Kit contains:

Part No.	Type
159001	1 x Ball drive
150100	1 x Wheel dressing stand
125904	1 x Tommy bar
151100	2 x Carriers
150992	1 x Sturdy metal box

Syncro pilots - standard length 143mm (5-5/8") one each of the following

Part No.	Diameter (inches)	Diameter (mm)
126274	.274	6.96
126279	.279	7.09
126310	.310	7.87
126312	.312	7.92
126314	.314	5.5
126340	.340	8.64
126342	.324	8.69
126371	.371	9.92

Grinding wheels

one each of the following

Part No.	Diameter (inches)	Diameter (mm)	Angle
153032	1.1/4	32	30°
153035	1.3/8	35	30°
153037	1.1/2	37	30°
153041	1.5/8	41	30°
153054	2.1/8	54	30°
154530	1.3/16	30	45°
154532	1.1/4	32	45°
154533	1.5/16	33	45°
154538	1.1/2	38	45°
154544	1.3/4	44	45°



Part No. 150092

SYNCRO SEATING KIT

For automotive use

Part No.	Description	Dimensions	Weight
150097A	Air drive unit	450 x 210 x 200mm	13.1kg
150097E	Electric drive unit	450 x 210 x 200mm	13.1kg

Kit contains:

Part No.	Type
150100	1 x Wheel dressing stand
151100	2 x Carriers
159001	1 x Ball drives
125904	1 x Tommy bar
159130E	1 x 2850r.p.m 240 Volt Hz (cycles) electric drive unit (electric drive unit)
159130A	1 x Sturdy metal box (air box unit)

Grinding wheels

one each of the following

Part No.	Diameter (inches)	Diameter (mm)	Angle
153032	1.1/4	32	30°
153035	1.3/8	35	30°
153037	1.1/2	37	30°
153041	1.5/8	41	30°
153044	1.3/4	44	30°
153048	1.7/8	48	30°
153054	2.1/8	54	30°
154530	1.3/16	30	45°
154532	1.1/4	32	45°
154533	1.5/16	33	45°
154535	1.3/8	35	45°
154538	1.1/2	38	45°
154541	1.5/5	41	45°
154544	1.3/4	44	45°
154548	1.7/8	48	45°
154551	2	51	45°



Part No. 150097E

Syncro pilots - standard length 143mm (5-5/8") one each of the following

Part No.	Diameter (inches)	Diameter (mm)
126274	.274	6.96
126314	.314	5.5
126279	.279	7.09
126312	.312	7.97
126340	.340	8.64
126310	.310	7.87
126342	.342	8.69
126371	.371	9.42

VALVE SEAT GRINDING WHEEL SET

A useful assortment of 9 standard, general purpose valve seat grinding wheels for popular vehicles.

Kit contains one each:

Part No.	Includes Part No.	Diameter (inches)	Diameter (mm)	Angle
152000	153032	1.1/4	32	30°
	153037	1.1/2	37	30°
	153041	1.5/8	41	30°
	154530	1.3/16	30	45°
	154532	1.1/4	32	45°
	154533	1.5/16	33	45°
	154538	1.1/2	38	45°
	154544	1.3/4	44	45°
	154551	2	51	45°

VALVE SEAT GRINDING WHEELS

Specifically designed for operating at speeds between 2500 and 8000r.p.m. Available in 30° and 45° with diameters between 25.4mm (1") and 76mm (3"). Medium speed rotation between 2500 and 8000r.p.m. prolongs the life of the equipment. Conventional electric or air drive units are used thus a special high-speed drive unit is not required.

Part No.	Diameter (inches)	Diameter (mm)	Angle
153025	1	25	30°
153029	1.1/8	29	30°
153030	1.3/16	30	30°
153032	1.1/4	32	30°
153033	1.5/16	33	30°
153035	1.3/8	35	30°
153037	1.7/16	37	30°
153038	1.1/2	38	30°
153040	1.9/16	40	30°
153041	1.5/8	41	30°
153044	1.3/4	44	30°
153048	1.7/8	48	30°
153051	2	51	30°
153054	2.1/8	54	30°
153057	2.1/4	57	30°
153060	2.3/8	60	30°
153063	2.1/2	63	30°
153070	2.3/4	70	30°
154525	1	25	45°
154529	1.1/8	29	45°

Part No.	Diameter (inches)	Diameter (mm)	Angle
154530	1.3/16	30	45°
154532	1.1/4	32	45°
154533	1.5/16	33	45°
154535	1.3/8	35	45°
154537	1.7/16	37	45°
154538	1.1/2	38	45°
154540	1.9/16	40	45°
154541	1.5/8	41	45°
154543	1.11/16	43	45°
154544	1.3/4	44	45°
154548	1.7/8	48	45°
154551	2	51	45°
154554	2.1/8	54	45°
154557	2.1/4	57	45°
154560	2.3/8	60	45°
154563	2.1/2	63	45°
154567	2.5/8	67	45°
154570	2.3/4	70	45°
154576	3	76	45°