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Tools and Supplies for Engine Builders
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BHF-KIT/BHF-KIT-CUSTOM
Hyper Finish Master Kit
Instructions

Please read instructions before using.
Instructions:

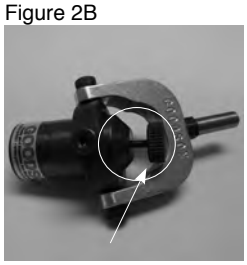
SET UP:

1. Remove Mandrel retaining nut. Figure 1.
2. Turn knurled adjustment knob counter clockwise approximately ¼" (10 threads). This removes any preload allowing free mandrel installation. See Figures below.

Figure 1

Figure 2A

Figure 2B

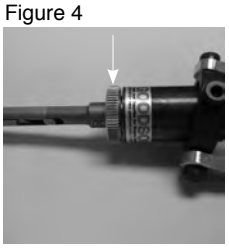


3. Select mandrel by diameter of guide ID needed. Insert mandrel into driver head, applying an inward pressure, while rotating until drive slots of mandrel drop over drive pins Figure 3A & 3B. Reinstall nut finger-tight. When tightened properly, an air gap of .020" to .030" will remain from nut to driver body. Figure 4.

Figure 3A

Figure 3B

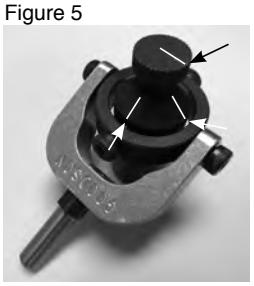
Figure 4



TO HONE:

1. Test set up by turning knurled adjusting knob clockwise. A slight resistance will be encountered when adjuster contacts the mandrel expander. Now, as the knob is turned the mandrel will expand. To release, turn knob counter clockwise.
2. There are four witness marks on the drive body and one on the knured adjuster. Fig. 5. Turning the knob one mark, advances or retracts mandrel by approximately .001". Feed rate depends on hardness of guide material. Honing soft guides removes material faster than hardened guides.

Figure 5



3. Before starting the honing process, the cylinder head must be set in a secure holder or head stands. Check for operating clearance. Hone and hone drive should be clear of any obstacles including rocker studs or stands, and combustion chamber walls. There will be minimal movement created by the honing process as we use the hone with very light pressure. The abrasive is VERY aggressive.
4. Make sure an adequate flow of diamond honing oil (DHO-10 or DHO-50) is flowing through the valve guide at all times. An oil squirt can will **not** work. The amount of oil supplied this way is simply not enough to flush the guide I.D. clean due to the amount of metal being removed; one reason we get tapered guide bores.
5. Lower the hone mandrel into the guide bore, and expand the abrasive until guide wall contact is made. Roll the hone clockwise with fingers, no power yet. The hone should turn freely with no spots that hang up. A slight out of round is not a problem as you can hone this out as part of the honing process.
6. The actual honing process requires a very light pressure on the abrasive. After rotating the unit by hand and establishing there are no obstructions, begin honing slowly (low RPM, 40 – 60). Advance feed one mark at a time only.
7. Once the bore diameter is achieved, stop, turn the feed knob back one notch and remove the hone. Measure the guide I.D. If more material has to be removed, simply reinstall the hone into the guide and expand it to the mark it was set at before removal and advance the knob to the needed amount. Remember each mark is approximately .001".
8. Just in case the mandrel becomes lodged in the guide (should not happen if above instructions have been followed) removal is accomplished by turning the adjuster counter clockwise 2 to 3 turns, then pull up to remove. If the unit is still lodged, bump the end of the mandrel (opposite drive head). The abrasive will loosen automatically in this direction.

See back for:
Cleaning and Maintenance and Break-In Procedure

Cleaning and Maintenance:

1. Abrasive can be removed by pushing brass plunger in completely, (Figure 10) and lifting abrasive from mandrel. (Figure 11).

Figure 10

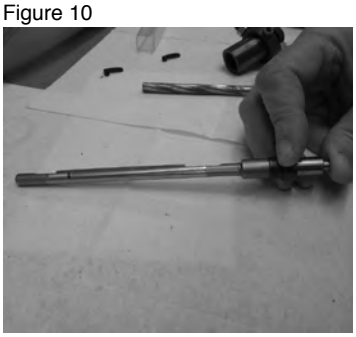
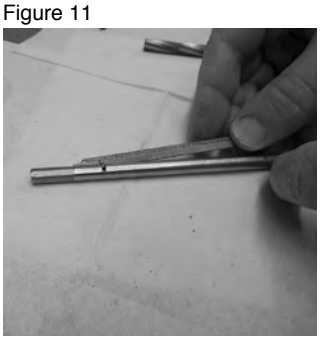


Figure 11



2. Clean abrasive channel and abrasive using parts cleaner and nylon brush. Reassemble and lightly lubricate with your favorite light oil. Note: Arbor assembly cannot be disassembled any farther than abrasive removal. Damage will result.

TECH TIP: Hyper-Finish Diamond Break in procedure:

Like any diamond abrasive there is a break-in period. The diamond, when new, may not be even from end to end or side to side (this is normal with diamond abrasives). This does not mean you will not be able to hone a straight guide. While honing, you will need to stroke the hone the full length of the abrasive.

There are a couple of ways you can speed up the break-in process.

1. Use an old straight valve guide and run the hone through the old guide several times, making sure you use liberal amounts of honing oil. Keep in mind that you may hone several hundred guides before the diamond abrasive truly gets broken in and comes into its own. Once the diamond is fully broken in you will notice it will hone quicker and smoother.

2. You can take our Goodson Dressing Stick, (DS-CBN) and manually dress the abrasive evenly. Soak the dressing stick in DHO-10 or DHO-50 oil for several hours before using. Make sure when dressing the abrasive, you keep the crown on the abrasive, do not flatten it out.

Once abrasive is even you will notice a shiny line the length of the diamond.

This will ensure a long life for your diamond abrasive!

Hyper-Finish Diamond Sizing System

Description		Order No.	Incl.
Master Kit		**BHF-KIT**	▼
Driver head		**HF-100**	x
Mandrel w/diamond	**Range**		
7mm	.271"-.310"	**BHFM-271C**	x
5/16"	.311"-.347"	**BHFM-307C**	x
11/32"	.344"-.383"	**BHFM-344C**	x
3/8"	.350"-.389"	**BHFM-350C**	x
Replacement Diamond Abrasive			
7mm	80mm long	**BHFS-040**	
5/16" to 3/8"	80mm long	**BHFS-050**	
Replacement Mandrels diamond abrasive sold separately			
7mm		**BHFM-271**	
5/16"		**BHFM-307**	
11/32"		**BHFM-344**	
3/8"		**BHFM-350**	
Nylon Valve Guide Brushes			
5.0 - 6.0mm		**GVP-10N**	
6.5 - 7mm		**GVP-11N**	x
5/16"		**GVP-1N**	x
11/32"		**GVP-2N**	x
3/8"		**GVP-3N**	x
Diamond Honing Oil			
8 fl. oz. (236.6 mL)		**DHO-8**	x
1 gal. (3.78 L)		**DHO-10**	
5 gal. (18.9 L)		**DHO-50**	
More sizes available. Check our website or catalog.			

BHF-Kit includes everything you see here
* Driver Head (HF-100)
* Mandrel with Diamond Abrasive (4 See Chart)
* Nylon Valve Guide Brushes (4 See Chart)
* 8 oz. Diamond Honing Oil (DHO-8)

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BHF-KIT/BHF-KIT-CUSTOM
INSTRUCCIONES DEL EQUIPO MAESTRO DE HIPER FINISH

Por favor leer las instrucciones antes de usar.

INSTRUCCIONES:

EQUIPO:

1.Remueva la tuerca de retención de mandril. Figura 1

Figura 1

2.Torne la perilla de ajuste en contra de las manecillas del reloj cerca de ¼" (10 hilos de rosca) esto eliminara la contra fuerza, permitiendo la instalación del mandril correctamente. Figuras 2A y 2B

Figura 2A

Figura 2B

3.Seleccione el diámetro del mandril de acuerdo al tamaño de la guía. Inserte el mandril en el soporte principal utilizando un poco de fuerza a la vez que lo rota hasta que las unas laterales entren en los canales del soporte. Figuras 3A y 3B. Re instale la tuerca de retención, y apriete con la fuerza de sus dedos. Cuando esta es instalada apropiadamente, habrá un espacio de .020" a .030" entre la tuerca y el soporte principal. Figura 4

PROCEDIMIENTO DE BRUNIDO

Figura 3A

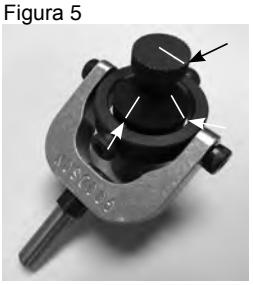
Figura 3B

Figura 4

1.Accione el equipo tornando la perilla de ajuste en sentido de las manecillas del reloj. Usted encontrara una pequeña resistencia al empezar a expandir el elemento de bruñido. Para retirar el mandril, simplemente accione la perilla en sentido contrario.

2.Usted encontrara 4 marcas principales en el soporte principal, a la vez que una marca en la perilla de ajuste. Figura 5. Tornar la perilla hacia una marca de estas equivale aproximadamente a .001". La frecuencia de ajuste durante el bruñido depende del material de la guía. El maquinado de guías blandas es más rápido que el de material endurecido.

Figura 5



3.Antes de empezar asegure la cabeza sobre una superficie segura, o sobre soportes. Revise y remueva cualquier componente que pueda interferir con el procedimiento como balancines o tornillos de balancines.

4.Revise las guías rotando suavemente el mandril en ellas para estar seguros que no hay obstáculos, de otra manera es mejor el uso previo de un escariador. Luego proceda con el bruñido usando abundantes cantidades de aceite de bruñido. Usted puede usar nuestro aceite numero DHO-8.

5.Proceda a bruñir la guía rotando el mandril aproximadamente cinco veces asegurán-ose que el elemento de diamante cubre la guía verticalmente en su totalidad resultando en un terminado correcto y uniforme. Siempre opere la bruñidora en dirección de las manecillas del reloj.

NOTA:

El uso constante de aceite para bruñido deberá ser usado para asegurar buen terminado, y la duración del equipo de bruñido.

6.Tome la medida del diámetro interior de la guía, y continúe el proceso hasta que alcance el terminado deseado. Tome medidas periódicamente para no llevar la medida más allá de la deseada.

MANTENIMIENTO Y LIMPIEZA

1.La unidad abrasiva puede ser removida empujando el pin de ajuste del mandril en su totalidad, y luego retirándolo a mano. (Figura 10) y (Figura 11).

Figura 10

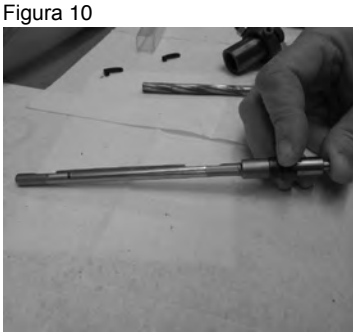
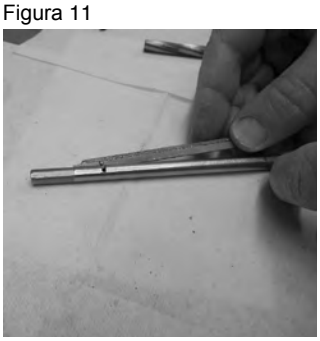


Figura 11



2.Limpie los residuos de material en los canales de los mandriles usando líquido limpiador de partes y el cepillo de nylon. Arme nuevamente el mandril utilizando un poco de aceite lubricante. No trate de desarmar la unidad del mandril, únicamente se puede retirar la unidad abrasiva. Usted puede correr el riesgo de daño permanente si intenta desarmarlo.

Sistema de terminado a la medida con segmento de diamante.

Descripción		Orden No.	Incl.
Equipo Maestro		**BHF-KIT**	▼
Soporte principal		**HF-100**	x
Mandril con diamante	**Rango**		
7mm	.271"-.310"	**BHFM-271C**	x
5/16"	.311"-.347"	**BHFM-307C**	x
11/32"	.344"-.383"	**BHFM-344C**	x
3/8"	.350"-.389"	**BHFM-350C**	x
Abrasivo de diamante de reemplazo			
7mm	80mm de largo	**BHFS-040**	
5/16" a 3/8"	80mm de largo	**BHFS-050**	
Mandriles de reemplazo (segmento de diamante vendido separadamente)			
7mm		**BHFM-271**	
5/16"		**BHFM-307**	
11/32"		**BHFM-344**	
3/8"		**BHFM-350**	
Cepillos de Nylon para guías			
5.0 - 6.0mm		**GVP-10N**	
6.5 - 7mm		**GVP-11N**	x
5/16"		**GVP-1N**	x
11/32"		**GVP-2N**	x
3/8"		**GVP-3N**	x
Aceite para bruñido de diamante			
8 fl. oz. (236.6 mL)		**DHO-8**	x
1 gal. (3.78 L)		**DHO-10**	
5 gal. (18.9 L)		**DHO-50**	

NOTA: Los mandriles también se venden separadamente. Usted también puede hacer su propio equipo seleccionando únicamente las medidas de las unidades que necesita.

El equipo incluye todo lo que usted ve numerado aquí!
* Soporte principal (HF-100)
* Mandril con unidad abrasiva (4 Ve la tabla)
* Cepillo de nylon para guías (4 Ve la tabla)
* Aceite para bruñido de diamante de 8 oz. (DHO-8)