

# HWH CORPORATION

## HYDRAULIC HOSE / FITTINGS / SWAGING GUIDE

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**NOTICE:** Hose and fittings must be matched as listed below and swaged with the listed die and pusher and a TS44701 swaging tool. See Parts Catalog page MR75.1000 for swaging tool and available equipment. Read numbers on parts carefully. The complete "Print on Hose" and "Number on Part" as listed below must be on the respective hose, fitting, die or pusher for proper identification. There will often be additional suffix letters, lot numbers or date codes on the components also.

- STEP 1.** Read the printing on the hose cover to determine which of the following hoses you have.  
**STEP 2.** Select the required hose end.  
**STEP 3.** Select the required Die, Pusher and Swaging Tool.

The current swaging tool, TS44701, has "HWH" stamped into the top face of the swaging tool die bowl. The current die sets have "H" stamped into the top of each half of the die set before the manufacturer part number. DO NOT use any swaging equipment that does not have the "HWH" or "H" stamp for swaging hose ends. Use of non-current swaging equipment can result in improper swaging of hose ends. This will result in leaking hose ends. Use only current equipment for swaging hose ends. DO NOT use die sets that do not have the "H" stamp in a current swaging tool. Use of unstamped die sets can damage a current swaging tool.

### HOSE: M50022P 1/8" High Pressure (Currently Used)

**Print on Hose: "Parker Parflex PDH-2 1/8 6000 PSI WP - USE 58 SERIES FITTINGS"**

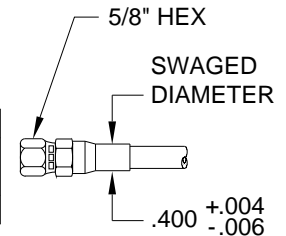
OUTSIDE DIAMETER: 0.33

Used on some applications from 1996 to 2000 and 2002 to -----.

Foretravel use started on 2002 coach #6029 rooms and rooms and locks on coach #6034.

**58 Series Part Numbers: For use on M50022P and M50021P Hose**

	FITTING 7/16-20 FM	DIE	PUSHER	HOSE
Number on Part	10658-4-2	HDIE H02	PUF 012	SEE ABOVE
HWH Part Number	FH12553P			
PN for Ordering	R90331 (Package of Five)	TS44677	TS13676	



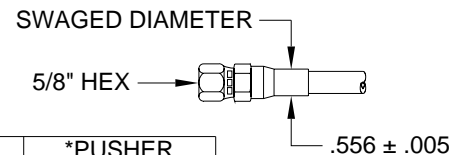
### HOSE: M50041S/M50041P 04 (1/4") Medium Pressure (Currently Used)

**Print on Hose: "HWH HOSE-04" or "HWH CORPORATION-04"**

OUTSIDE DIAMETER: 0.50

Widely used on most leveling systems and many room extensions.

Part Numbers:	FITTING 7/16-20 FM	DIE FOR	PUSHER	*PUSHER	HOSE
		FM or MALE	FOR FM	FOR MALE	
Number on Part	3903-04544 or 90304-045400 or 10655-4-4	H4540-3W400	4599-FP012 or PUF-010	4599-MP002 or PUM-002	HWH HOSE-04
HWH Part Number	FH3338S				
PN for Ordering	R90088 (Package of Five) RFH3338 (Package of 20)	TS44675	TS5048	*TS10925	



\* Not Common for Field Replacement-For Use with Male Hose End FH7623S (#3903-04504 or 10355-4-4)

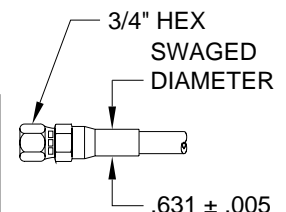
### HOSE: M50051S/M50051P 05 (5/16") Medium Pressure (Currently Used)

**Print on Hose: "HWH HOSE-05" or "EATON SYN FLEX 3130-05 SAE 100R7 5/16" WP 2500 PSI"**

OUTSIDE DIAMETER: 0.58

Used primarily for 24,000# capacity leveling jacks.

Part Numbers:	FITTING 1/2-20 FM	DIE	PUSHER	HOSE
Number on Part	3903-05545	H4540-30500	4599-FP013 or PUF-013	SEE ABOVE
HWH Part Number	FH4083S			
PN for Ordering	RFH4083 (Package of Ten)	TS45036	TS5050	



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**HOSE: M50023S 02 (1/8") High Pressure (No Longer Used)**

Print on Hose: "HWH-02 HP USE 4540-30200 DIE, 4599-FP010 PUSHER"\*

OUTSIDE DIAMETER: 0.33

Used on some room extensions and 210 console leveling systems in 2001 and 2002.

**REPAIRS ARE NOT AVAILABLE FOR THIS HOSE. REPLACE WITH M50022P  
 1/8" HIGH PRESSURE, CONSULT HWH CORPORATION.**

**HOSE: M50021P 1/8" Medium Pressure (No Longer Used)**

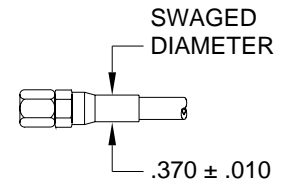
Print on Hose: "Parker Parflex 540N-2 1/8 WP 2500 PSI - USE 55 SERIES FITTINGS"

OUTSIDE DIAMETER: 0.33

Used on some room extension mechanisms from 1996 to 2001. Hose was discontinued in 2001. Hose may be replaced with M50023S HWH 02 HP hose. The 55 series fitting for this hose was also discontinued in 2001. The 58 series high pressure fittings, die and pusher may also be used on this hose.

**55 Series Part Numbers: (No Longer Available)**

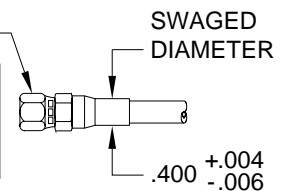
	FITTING 7/16-20 FM
Number on Part	*10655-4-2



**58 Series Part Numbers: For use on M50022P and M50021P Hose**

	FITTING 7/16-20 FM	DIE	PUSHER	HOSE
Number on Part	10658-4-2	HDIE H02	PUF 012	SEE ABOVE
HWH Part Number	FH12553P			
PN for Ordering	R90331 (Package of Five)	TS44677	TS13676	

5/8" HEX



**\*NO LONGER AVAILABLE, USE THE 58 SERIES COMPONENTS.**

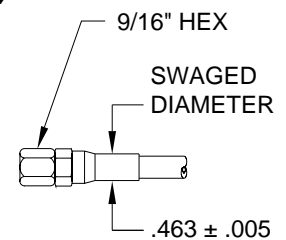
**HOSE: M50032S 03 (3/16) High Pressure (No Longer Used)**

Print on Hose: "HWH HOSE-03H"

OUTSIDE DIAMETER: 0.38

Used on some room extensions from 1998 to 2002.

Swaging equipment and hose ends are not available for this hose.  
 Complete assembly must be ordered for hose repair.  
 Contact HWH Corporation with hose length needed or for alternative repair information.



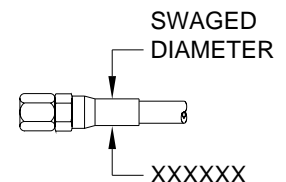
**HOSE: M50061P 3/8" Medium Pressure (No Longer Used)**

Print on Hose: "HWH CORPORATION-06M" or  
 "EATON SYN FLEX 3130-05 SAE 100R7 3/8" WP 2250 PSI"

OUTSIDE DIAMETER 0.64

Used primarily on 1985 Executive Motor Home leveling systems.

Swaging equipment and hose ends are not available for this hose.  
 Complete hose assemblies can be ordered.  
 Contact HWH Corporation with hose length needed.



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# HWH CORPORATION

## HOSE SWAGING AND REPAIR INSTRUCTIONS

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These instructions must be followed carefully to assure quality hose swaging and repair. Failure to follow these instructions will result in swaging failures causing leaks and unnecessary replacement of hoses or hose ends.

**IMPORTANT: A valid swaging tool will have "HWH" stamped into the surface indicated in the swaging tool diagram. The part number stamped into the top of each half of the die set will have the prefix "H" if the die set is valid to use. DO NOT USE A SWAGING TOOL OR DIE SET THAT IS NOT APPROPRIATELY STAMPED. DO NOT USE A DIE SET WITHOUT THE PREFIX "H" IN A SWAGING TOOL WITH THE "HWH" STAMP.**

1. Refer to the HOSE / FITTINGS / SWAGING GUIDE sheet, number ML24976, for information which is important when making or repairing a hose. HWH uses several styles and sizes of hydraulic hose. It is important to match the correct hose end with the hose being used. Also the Die and Pusher must be matched to the hose and hose end. The ML24976 sheet contains this information.

**IMPORTANT: ML24976 contains measurements for a finished swag. If a hose end is leaking between the fitting and hose, check the swaged diameter. If the swag is within the tolerance given, DO NOT swag on a new end. The complete hose should be replaced. IF SWAGING A NEW END ON A HOSE, IT IS IMPORTANT TO CHECK THE FINISHED SWAG TO MAKE SURE IT IS WITHIN THE TOLERANCE GIVEN FOR THAT HOSE END. If the swag is larger than acceptable, turn the swag 90° from the original swag position (refer to the swag line on the fitting) and reswag the end. If the new swaged end is not within the tolerance, the complete hose should be replaced.**

2. The hose should be cut with a sharp hose or tubing cutter. The cut should be a flat 90 Degree cut. Hose cut at an angle may cause leaks.

3. Make sure the swaging equipment, the new hose end, and the hose are clean. Coat the angular surface with very light coat of NEVER-SEEZ before installing the die set into the swaging tool. Coat the outside of the hose end before swaging. The die and hose end will gull if NEVER-SEEZ is not used. If NEVER-SEEZ is not available, use a heavy duty gear lube.

**IMPORTANT: Before swaging a hose end the swaging equipment should be checked. Look for nicks or dents on the die mating surfaces and where the die seats in the swaging tool. Any deformations in these areas could cause the dies to not fit together properly during the swaging procedure. Check the die for galling in the area that the hose end is pushed into. Any damaged die or swaging tool should be replaced or fixed before being used. Using damaged equipment will result in improperly swaged hose ends and leaks.**

4. Set the dies in the swaging tool and lock in place with the dogs. It is OK if the dogs do not fit tightly against the dies. Feed the hose through the die.

5. The hose has to be inserted into the hose end as far as it can go. The hose should go into the hose end approximately to the part number on the hose end. It is a good idea to insert the hose before starting the actual swag and marking the hose with a piece of tape. The tape will show the hose was not pulled from the hose end as the swag was performed.

**NOTE: When repairing a hose with oil in it be careful to not point the hose down into the hose end. This could let oil fill the hose end causing a swaging problem and a leak.**

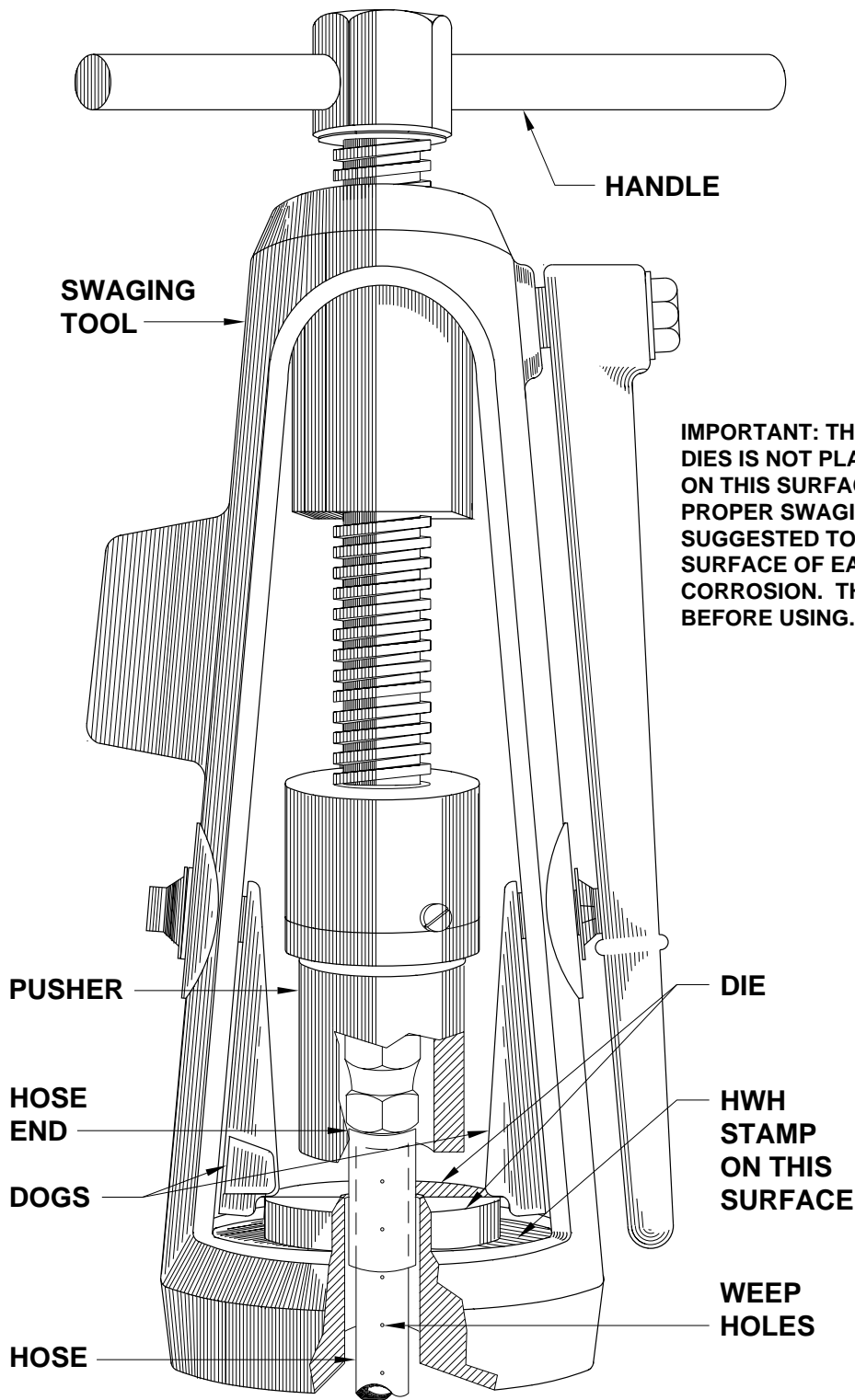
6. Run the pusher down to the hose end. Make sure the hose end is seated in the pusher. Make sure the hose end is not tilted to one side of the pusher. **Turn the swaging tool handle until the pusher is turned down to contact the die set.** Take care that the hose does not pull out of the hose end as the swag is started. If the hose was marked, this can be checked when the swag is complete.

**DO NOT USE AN IMPACT WRENCH TO TURN THE SWAGING TOOL.**

7. **TO properly tighten the hose onto a fitting, make the hose end snug (finger tight) on the fitting. Using the proper wrench, tighten the hose end 2 flats (1/3 turn) NO MORE.**

**IMPORTANT: A hose that is repaired due to a hose end leak may have residual oil trapped between the inner core and the outer covering. The outer hose cover has weep holes in it. Any residual oil can seep from these weep holes as the hose is pressurized. This seepage may continue for some time after the repair. It is important to wipe the hose several times and inform the customer of this possibility. THIS IS NOT A LEAKY HOSE END. However, if the hose continuously drips fluid a problem is indicated.**

**HWH CORPORATION**  
**HOSE SWAGING AND REPAIR INSTRUCTIONS**  
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**IMPORTANT: THE ANGULAR SURFACE OF THE DIES IS NOT PLATED. ANY RUST OR CORROSION ON THIS SURFACE WILL INTERFERE WITH THE PROPER SWAGING OF THE HOSE END. IT IS SUGGESTED TO OIL THE MATING AND ANGULAR SURFACE OF EACH DIE AFTER USING TO PREVENT CORROSION. THOROUGHLY CLEAN EACH DIE BEFORE USING.**