



Service Bulletin

Bulletin Number: **SB-21-347**
Release Date: **January 26, 2021**
Distribution: **Heil Dealers, Heil Customers, Heil Technical Services, Heil Customer Care**
Subject: **DuraPack® Python®: Pump-to-Valve 4-Wire Spiral Hydraulic Hoses Standardization**

NOTE: READ THIS BULLETIN IN ITS ENTIRETY BEFORE BEGINNING ANY REPAIR WORK.

Starting **August 1, 2020**, to ensure the highest hydraulic hose reliability, **4-wire spiral hydraulic hoses** became standard in the locations identified below on all DuraPack® Python® units.

To achieve this change, the following 2-wire braided hydraulic hoses (Parker 387ST-16) have been replaced with 4-wire spiral hoses (Parker 722ST-16 or equivalent) as applicable:

- (1) For units **WITHOUT** the Dual High-Pressure Filter option (**Figure 1** and **Figure 3**):
 - (a) Pump P1 to lift valve: one (1) to two (2) hoses
 - (b) Pump P2 to flow combining tee: one (1) to two (2) hoses
 - (c) Flow combining tee to main body control valve: one (1) hose
- (2) For units **WITH** the Dual High-Pressure Filter option (**Figure 2** and **Figure 4**):
 - (a) Pump P1 to first high-pressure filter: one (1) hose
 - (b) First high-pressure filter to lift valve: one (1) hose (NOTE: changed in production to 4-wire hose in February 2019)
 - (c) Pump P2 to second high-pressure filter: one (1) hose
 - (d) Second high-pressure filter to flow combining tee: one (1) hose (NOTE: changed in production to 4-wire hose in August 2018)
 - (e) Flow combining tee to main body control valve: one (1) hose

To address units in the field, Heil Environmental agrees to provide warranty replacement of these **OEM installed** hoses on the units listed in the Products Affected section when Hose Specification/Installation Requirements from Section 3 of this Service Bulletin are followed. **ONLY** replace these hydraulic hoses if they are 2-wire braided hydraulic hoses (Parker 387ST-16). Refer to **Figures 1-4** on the next two pages.

Additionally, this Service Bulletin outlines the procedure to inspect all hose support clamps for proper installation and perform Hydraulic System tasks as outlined in the Heil Service Manual Body Preventive Maintenance Chart.

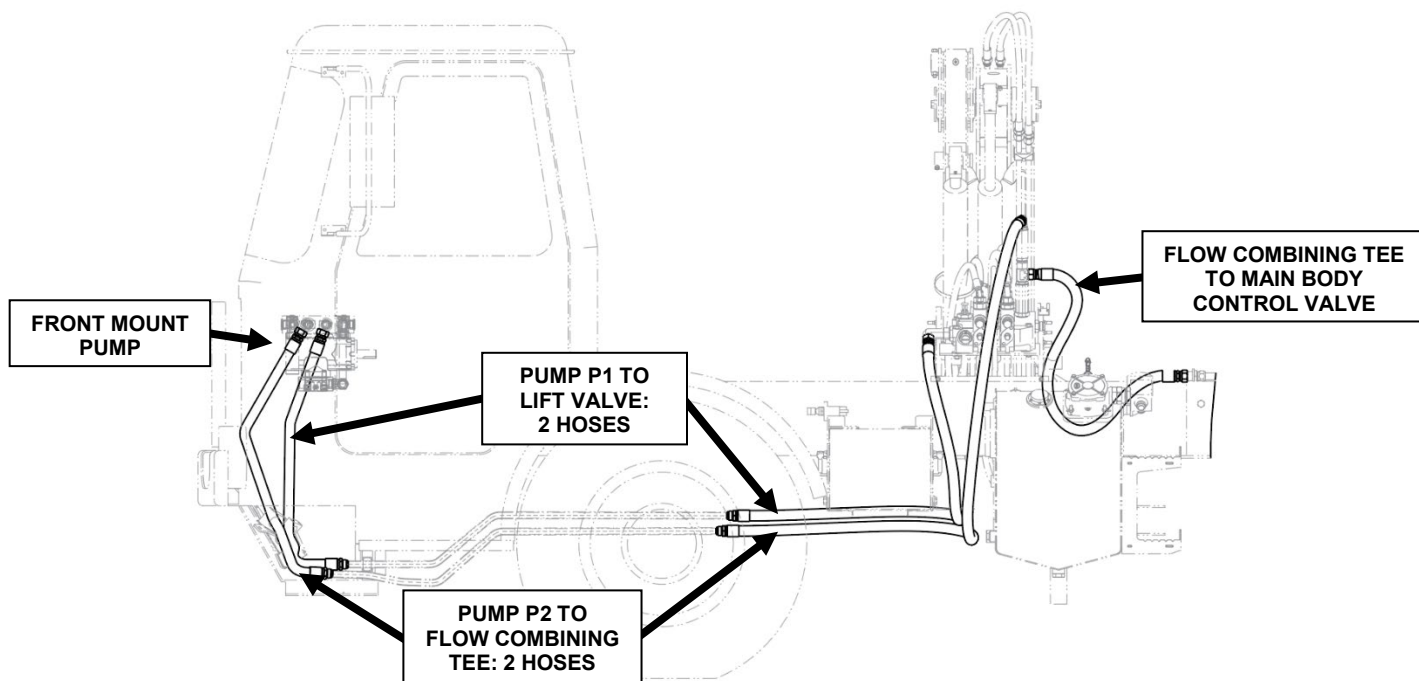


Figure 1. Units WITHOUT Dual High-Pressure Filter and WITH Front Mount Pump: Hose Configuration

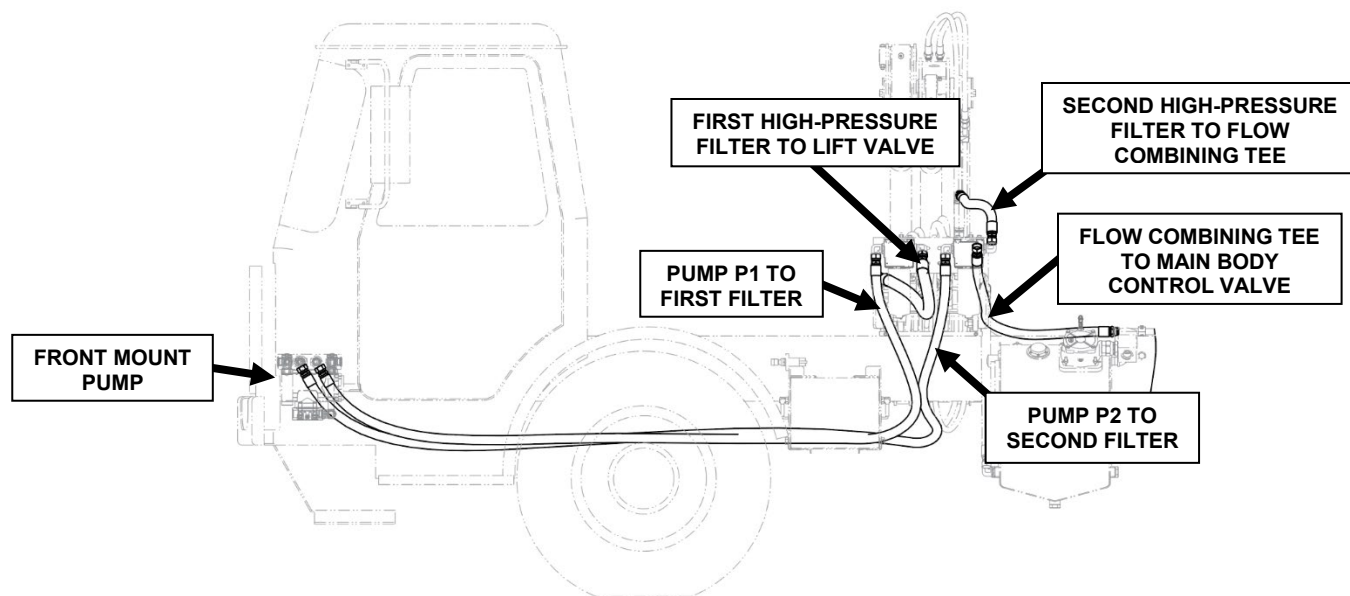


Figure 2. Units WITH Dual High-Pressure Filter and WITH Front Mount Pump: Hose Configuration

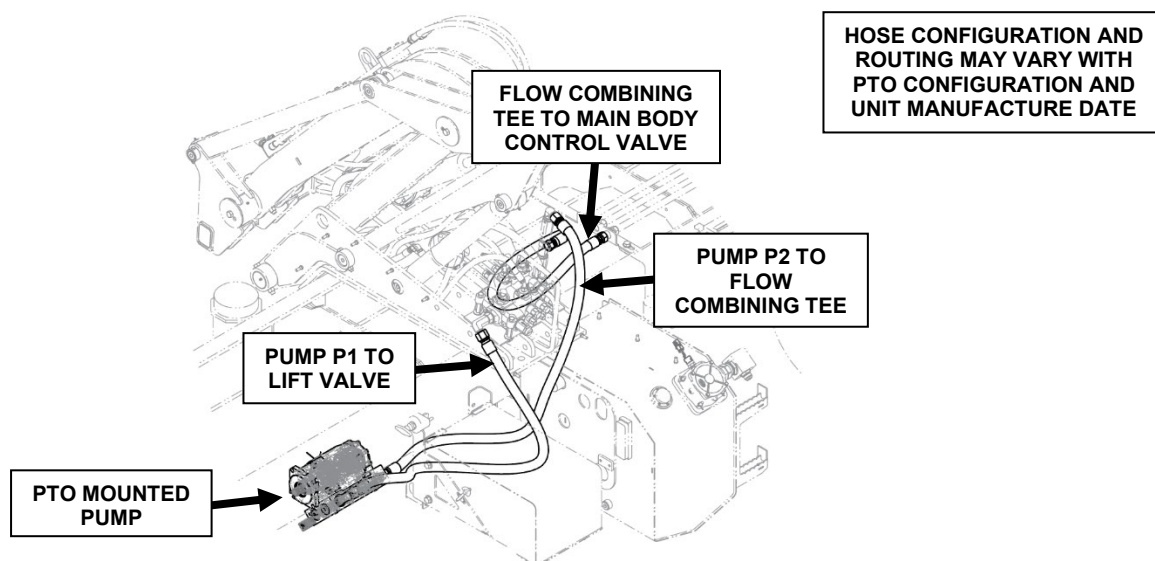


Figure 3. Units WITHOUT Dual High-Pressure Filter and WITH PTO Mounted Pump: Hose Configuration

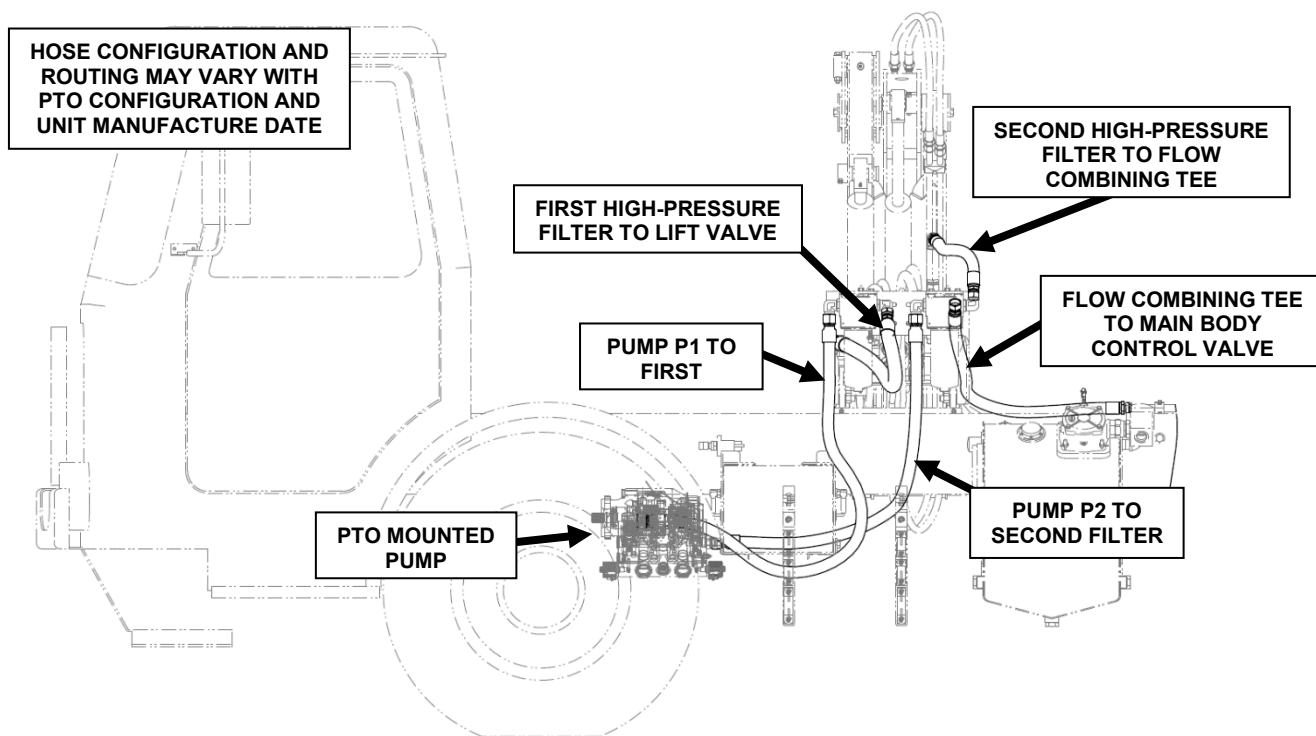


Figure 4. Units WITH Dual High-Pressure Filter and WITH PTO Mounted Pump: Hose Configuration



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1. PLANNING INFORMATION

A. Products Affected

This Service Bulletin applies to DuraPack® Python® units manufactured between **January 1, 2017** and **July 31, 2020**, excluding Waste Management units.

B. Compliance

Each Dealer must perform these tasks as outlined in this Service Bulletin for each unit identified above in the Products Affected section no later than **March 19, 2021**. The tasks outlined in this Service Bulletin must be performed by a qualified technician.

C. Manpower

The labor effort required to accomplish the tasks in this Service Bulletin is shown in **Table 1**.

Table 1. Manpower

TASK	MAN HOURS REQUIRED
Replace high-pressure hydraulic hoses as described in this Service Bulletin	0.5 per replaced hose

D. Tools, Materials and Parts Needed

The tools and parts necessary to perform the rework are outlined in **Table 2** and **Table 3**.

Table 2. Tools and Materials

Item	Part Number	Application
Personal Protective Equipment	Commercially available	Safety protection as required by employer
Wrench Set	Commercially available	To disconnect/connect hydraulic fittings
Torque Wrench	Commercially available	To properly tighten hydraulic fittings
Bucket	Commercially available	To capture hydraulic fluid

Table 3. Parts

PART NUMBER	DESCRIPTION	QTY PER UNIT	SPECIAL INSTRUCTIONS
MP6-FKFK-020, MP6-FKFK-021, MP6-FKFK-022, through MP6-FKFK-100	Hydraulic Hose, 4000 PSI Minimum Working Pressure, 4- Wire Spiral, 1"	3-5	Hose part number varies with chassis configuration. Heil part number ends in hose length in inches. Use Parker 722ST-16 or equivalent. See Table 4.
N/A	Crimp Fitting, -16 (1"), Female 37 Degree, JIC, Straight Swivel	4	Hose end crimp fittings are specific to the brand and model of hose.
036-1982-50380	Clamp, 4-Wire Spiral Hydraulic Hose, 1"	3	



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Table 4. Replacement OEM Hose Brand and Model Equivalents

BRAND	MODEL
Parker	722ST
Gates	EFG4K
Eaton / Aeroquip	GH493
Eaton / Weatherhead	H430
Eaton / Weatherhead	H471
Semperit	FLEXLINE 4000
Kurt	E-Z BEND 4SK
Pirtek	100CS3

2. PREPARING THE UNIT AND WORK AREA

Prior to performing Lock-Out/Tag-Out, make sure to LOWER the arms and forks FULLY DOWN to the ground or RAISE the arms FULLY UP against the arm stops.

Be certain that all hydraulic pressure has been fully relieved before beginning any hydraulic rework.

To relief the hydraulic pressure in the system:

- (1) When there are in-cab controls, turn the ignition switch to ON then:
 - (a) Move the switches of the hydraulic controls. This relieves the pressure in the cylinders.
 - (b) Turn the ignition switch to OFF.
 - (c) When there are no in-cab controls, move the outside control levers to relieve the pressure in the cylinders.

Make sure that the unit is in **Lock-Out/Tag-Out mode** before performing re-work. Refer to and follow your company's Lock-Out/Tag-Out policies and procedures. At a minimum, refer to and follow the Lock-Out/Tag-Out procedure found in your Heil Service Manual. Always wear appropriate Personal Protective Equipment as required by your employer (but to always include at a minimum, safety glasses and OSHA approved hard-toed boots) when repairing a unit or performing scheduled maintenance on a unit. Clear the work area around the unit of all unnecessary people and equipment.



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3. CORRECTIVE ACTIONS

With the unit prepared as described in step 2 of this Service Bulletin, in **Lock-Out/Tag-Out mode**, carefully follow the steps below. Repeat procedure for all affected high-pressure hoses.

A. Inspect for Affected High-Pressure Hydraulic Hoses

Visually inspect the high-pressure hoses listed below to determine if they are 2-wire braided hydraulic hoses (Parker 387ST-16). **ONLY 2-wire braided hydraulic hoses (Parker 387ST-16) should be replaced with 4-wire spiral hoses (Parker 722ST-16 or equivalent; See Table 4). The Parker hose model number will be clearly printed on the outside of the hose.**

- (1) For units **WITHOUT** the Dual High-Pressure Filter option, inspect:
 - (a) Pump P1 to lift valve: one (1) to two (2) hoses
 - (b) Pump P2 to flow combining tee: one (1) to two (2) hoses
 - (c) Flow combining tee to main body control valve: one (1) hose
- (2) For units **WITH** the Dual High-Pressure Filter option, inspect:
 - (a) Pump P1 to first high-pressure filter: one (1) hose
 - (b) First high-pressure filter to lift valve: one (1) hose (NOTE: changed in production to 4-wire hose in February 2019)
 - (c) Pump P2 to second high-pressure filter: one (1) hose
 - (d) Second high-pressure filter to flow combining tee: one (1) hose (NOTE: changed in production to 4-wire hose in August 2018)
 - (e) Flow combining tee to main body control valve: one (1) hose

B. Replace **ONLY** 2-Wire Braided Hydraulic High-Pressure Hydraulic Hoses

Refer to **Table 3** for Heil part numbers and **Table 4** for the Parker replacement hose and non-Parker hose equivalents.

- (1) Identify the hydraulic hoses to be replaced. Refer to **Figures 1-4**.

NOTE: For units equipped with the Dual High-Pressure Filter option, the hose from the first high-pressure filter to the lift valve and the hose from the second dual high-pressure filter to the flow combining tee may already be 4-Wire Spiral, and therefore would not need to be replaced. Check the hose model number printed on the hose.

- (2) Detach the hydraulic fittings and drain remaining oil from the old hose into the container.
- (3) Procure new 1" diameter high-pressure hoses (Parker 722ST-16 or equivalent) with new fittings that meet the requirements below. Some unit configurations may require different length hoses than the hose that is being replaced in order to achieve the following installation requirements, however the hose length of the hose being replaced can be used as a baseline for determining the replacement hose length.

Hose Specification/Installation Requirements:

- (a) The required minimum Bend Radius specification of the replacement hose material is 6" or less.
 - (b) Length of the replacement hose must allow the installed hose Bend Radius to be 6" or more.
 - (c) Installation of the replacement hose must allow for a straight section of hose adjacent to the crimp fitting to be a minimum of twice the Outside Diameter (OD) of the hose. For a Heil supplied hose for this application this is a minimum of 2.75".
 - (d) The hose length must be made so that the hose assembly has enough length to allow for changes in length to occur when the hose is pressured and for the system components to operate without violating the installation requirements.
 - (e) The replacement hose must have an integrated Abrasion Resistant Outer Layer. All replacement hoses are to be of the 4-wire spiral construction and have a minimum of 4000 PSI Working Pressure rating.
- (4) Install the new hydraulic hoses. Use a backup wrench to ensure that the hose does not twist while tightening the fittings. Torque fittings to 130 FT-LBS.

C. Test for Hydraulic Fluid Leaks

- (1) Take the unit out of Lock-Out/Tag-Out Mode.
- (2) Operate all unit functions. Then check for leaks. If there are leaks, loosen and re-torque the hydraulic fittings that are leaking and then check again for leaks. When there are no leaks, check hydraulic oil level and add oil if needed. Contact Technical Services if leaks continue.
- (3) When there are no leaks, check hydraulic oil level and add new oil if needed. **Never reuse drained oil.**

D. Inspect all Hydraulic Hose Support Clamps

Hydraulic tube clamps should never be used on hydraulic hoses. Over time, these types of clamps will rub through the hose covering and potentially cause hose failure.

- (1) Inspect all hose clamps. There must be no daylight coming through between the hose and clamp, as shown in **Figure 5**. The clamps must be tight and secure around the hoses, as shown in **Figure 6**.



Figure 5. INCORRECT Use of Tube Clamps for Hoses



Figure 6. CORRECT Use of Hose Clamps for Hoses



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- (2) Replace any tube clamps used for hoses with appropriately sized hose clamps. Refer to **Table 5**.

Table 5. Hose Support Clamp Part Number for Parker 722ST-16

SINGLE HOSE SUPPORT CLAMP FOR PARKER ABRASION RESISTANT HOSE WITHOUT FIBER GUARD							
HOSE WORKING PRESSURE	HOSE CONSTRUCTION	PARKER HOSE SERIES	PARKER HOSE SIZE	HOSE OUTSIDE DIAMETER		HEIL PART CLAMP NUMBER	CLAMP BORE (MM)
				INCH	MM		
4000 PSI	4-WIRE SPIRAL	722ST	16	1.49	37.8	036-1982-50380	38.0

E. Body Hydraulics Preventive Maintenance

Following the Body Preventive Maintenance schedule found in Heil Service Manuals, perform the Hydraulic System tasks below.

- (1) Daily (8 Hours)
 - (a) Check oil level – add if necessary.
- (2) Weekly (40 Hours)
 - (a) Check cylinders, pump, hoses, tubes, fittings, and adapters for leaks.
 - (b) Check hoses for cracks, crushes, and cover blisters. Repair or replace if necessary with genuine Heil parts.
 - (c) Any replacement hose should be the same size and pressure rating as listed on the original OEM hose.
 - (d) Check control valve seals for leaks. Repair or replace if necessary.
- (3) Every Six Months (1000 Hours)
 - (a) Replace filters after first 30 days of operation, then every 6 months or 1000 hours of operation OR when filter bypass light is ON.
 - (b) Replace tank breather filter every time you replace filter element.
- (4) Yearly (2000 Hours)
 - (a) Drain, flush, and refill.
 - (b) Change filter elements.
 - (c) Change oil when oil sample shows to change oil.



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To obtain reimbursement from Heil for the hydraulic hoses (with fittings) and any re-work as a result of implementing this Service Bulletin, submit one completed Request For Credit (RFC) for each unit re-worked. Heil Dealers and Service Centers must file claims electronically using Heil's online warranty system. Labor will be reimbursed one-half (0.5) hour per qualified and replaced high-pressure hydraulic hose per re-worked unit on affected units listed in this Service Bulletin. **Heil reserves the right to request the return of any replaced hoses for our inspection to review any reimbursement claim.** All re-work must be completed by **March 19, 2021**.

If you have any questions regarding the information detailed in this Bulletin, please contact Heil Technical Service at 866.310.4345.

*Heil Environmental Service Bulletin procedures are intended for use by professional technicians, NOT a "do-it-yourselfer." They are written to inform experienced technicians of conditions that may occur on some units, or to provide information that could assist in the proper servicing of a unit. Properly trained technicians have **access to and are familiar with the applicable Heil Operation Manual and Heil Parts and Service Manuals** and have the equipment, tools, safety training, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the Bulletin instructions apply to your unit, or that your unit will have that condition. See your Heil Dealer to determine whether your unit may benefit from the information in this Service Bulletin.*

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