OPERATOR MANUAL

HYDRA-SUPREME FLUID SCRUBBING SYSTEM
Model 810-065
CAN SEAMING GEAR BOX FILTRATION SYSTEM

INTRODUCTION:

Hydra-Supreme fluid scrubbing systems are high performance industrial filters designed to remove particulate, oxidized oil and water from heavy duty gear boxes and transfer cases. This particular model - 810-065, is specifically designed for cleaning the lubrication oil in KHS slow speed can seaming systems. Constructed from durable, corrosion resistant materials, it is designed for constant, uninterrupted use without immediate supervision. This system will assure a high degree of fluid purity with an absolute minimum of maintenance and service requirements.

SYSTEM OPERATION:

The Hydra-Supreme fluid scrubbing system utilizes a patented cellulose element to clean the working fluid of accumulated debris. The cleaning process utilizes three interlocking processes to remove solid particulate, varnish, and water from the oil. By combining barrier filtration, chromatographic separation and absorption, all three of the listed contaminants can be removed from the oil simultaneously and efficiently. As the filter traps the contaminants, it builds pressure and the flow decreases, signaling the need for filter replacement.

SYSTEM PRESSURE:

Pressure readings will vary with the viscosity of the oil used, the operating temperature of the reservoir, and the amount of debris absorbed by the filter. A rule of thumb is to change out the filter when a 30 PSI increase has occurred under identical operating temperatures. All filters should be changed at 60-65 PSI. Typical oil operating temperature is 100^0 F or 40^0C. Colder operating temperatures may require the application of a heating blanket on the canister.

Viscosity	Flow Rate	Typical Pressure	Change Out Pressure
ISO 100 (750 SUS)	.25 GPM	25-35 PSI	55-60 PSI

Typical filter change out is 30 PSI increase in original operating pressure or a maximum of 65 PSI. Under no circumstance should your unit ever exceed 85 psi. Should this happen shut down the system and contact HTI's Technical Service Department at (949)456-0763 or techsewrvice@htifiltration.com for assistance.

SYSTEM LOCATION:

Although the Hydra-Supreme system uses a self-priming pump, it is important to keep the filter as close to the reservoir as possible. The suction line should be less than 8' long and a minimum of ½" ID.

The system, and pump motor in particular, should be protected from falls and pooling water.

PLUMBING:

The suction port utilizes a 1/2" inlet with a male 37^0 male JIC hose fitting. A maximum hose length of 8' is recommended The return line fittings on the solenoid valve also utilize a 1/2" a male 37^0 male JIC hose fitting.

Sealing caulk or Teflon tape is recommended when working on all SAE or NPT threaded fittings.

Oil flow should be from the bottom of the reservoir and the clean oil returned to the top to avoid recirculating clean oil only.

ELECTRICAL:

The electrical power system should be independent of the machine power as the oil scrubbing system should run continuously for efficient contaminant control. See the electrical connection drawing for electrical details.

INITIAL START-UP PROCEDURE

Upon completion of the electrical and hydraulic connections, the ***Hydra-Supreme*** is ready for start-up. The internal pump relief is factory set for a maximum operating pressure of 85 psi. If your unit exceeds this level during any phase of operation, it should be turned off immediately and HTI should be contacted for instructions. If the machine oil is cold, the system will show high startup pressures that will subside as the oil warms to operating temperature.

Open all valves on the inlet and return lines.

Turn on the electrical power.

Crack open the bleed valve on the top of the canister.

As soon as the fluid starts to flow from the bleed hole, close the valve securely and wipe away the fluid from the canister lid.

Let the system warm up to a typical operating temperature and check for leaks before leaving the work area.

FILTER ELEMENT REPLACEMENT

This system uses replacement filter element 800-053

Step 1: Turn off the filter system. It is not necessary to turn off the host machine to service the *Hydra-Supreme* filter. Confirm that the system pressure returns to 0 PSI.

Step 2: Position a capture vessel below the drain hose. Open the ball valve on the bottom of the canister, and then open the bleed cock on the top of the canister. Drained oil can later be used to refill the canister.

Step 3: Remove the canister clamp ring and lift off the canister lid.

Step 4: Examine the canister "O" ring seal for cracks and wear spots. If the canister lid seal was leaking, or if the "O" ring shows signs of wear, replace the seal.

Step 5: Unscrew the "T" handle assembly that holds the filter in place. The cup seal on the handle assembly should be smooth and free of rough spots or tears. Replacement seals are available.

Step 6: Slice open the end of the plastic bag holding the new element. Remove the new element and set in a clean area. Lift the filter element off of the center post and place it in a container to drain free of oil.

Step 7: Slide new element over the center post. The ‘down” side has the black O-ring and the “up” side has a ferrule with the metal bale and a deep port for the T-handle to fit inside.

Step 8: Close drain valve and slowly refill canister with the oil captured in the bucket.

Step 9: Put the "O" ring back on the canister lip, replace lid, clamp and tighten.

Step 10: Start the pump motor and allow air to bleed out through bleed cock on top of canister. Close bleed cock when fluid starts to come out. Wipe off unit and check for leaks.

Step 11: Allow the old filter to drain free of oil, typically 24 hours and dispose of according to local regulations.

HTI FILTRATION INC.

7716 Gary Watson Pt. • Colorado Springs, CO 80915 • 719.490.8800 • sales@htifiltration.com

May 11, 2021

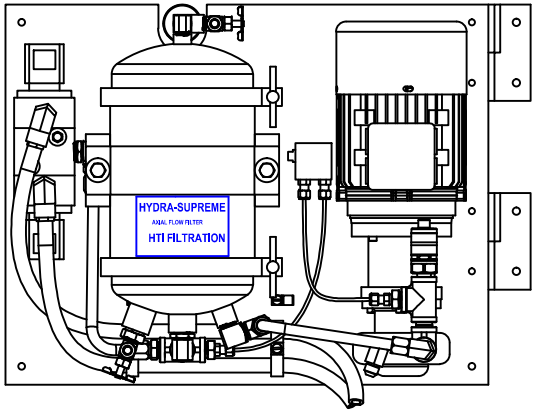
Product Safety Bulletin

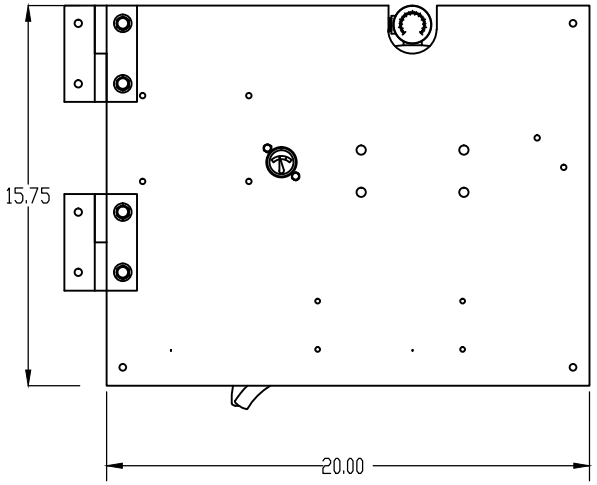
Lid Clamp Tightening Instructions
HTI Part # 540-010 & 540-012

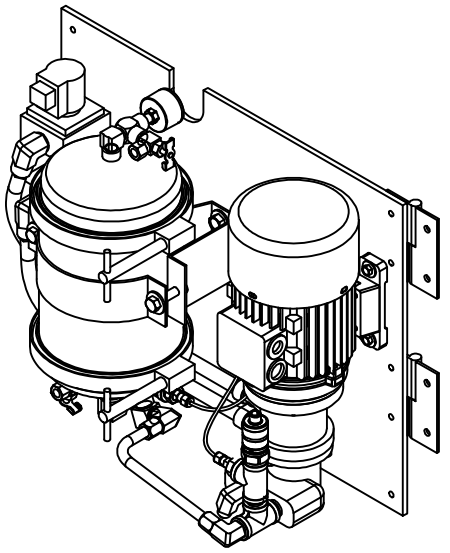
HTI Filtration continuously monitors our products in the field to improve our equipment capabilities and safety. We have been informed that some canisters are developing leaks at the lid seal area after being in service for several years. After consulting with the canister manufacturer, it has been determined that this can be caused by overtightening the stamped steel 2-piece lid clamps, HTI Part # 540-012.
To prevent distortion of the canister body and lid flanges, please follow the following torque specifications for the older 540-012 lid clamps and the newer 540-010 V-Band clamps.

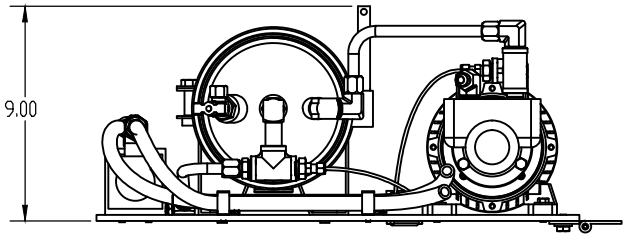
540-012 – Alternate tightening: from one side to the other until clamps are fully nested into each other and you have achieved an even pull down of the cover. DO NOT OVER TIGHTEN.

540-010 – Hand tighten to a maximum of 30 Ft L\Lbs.

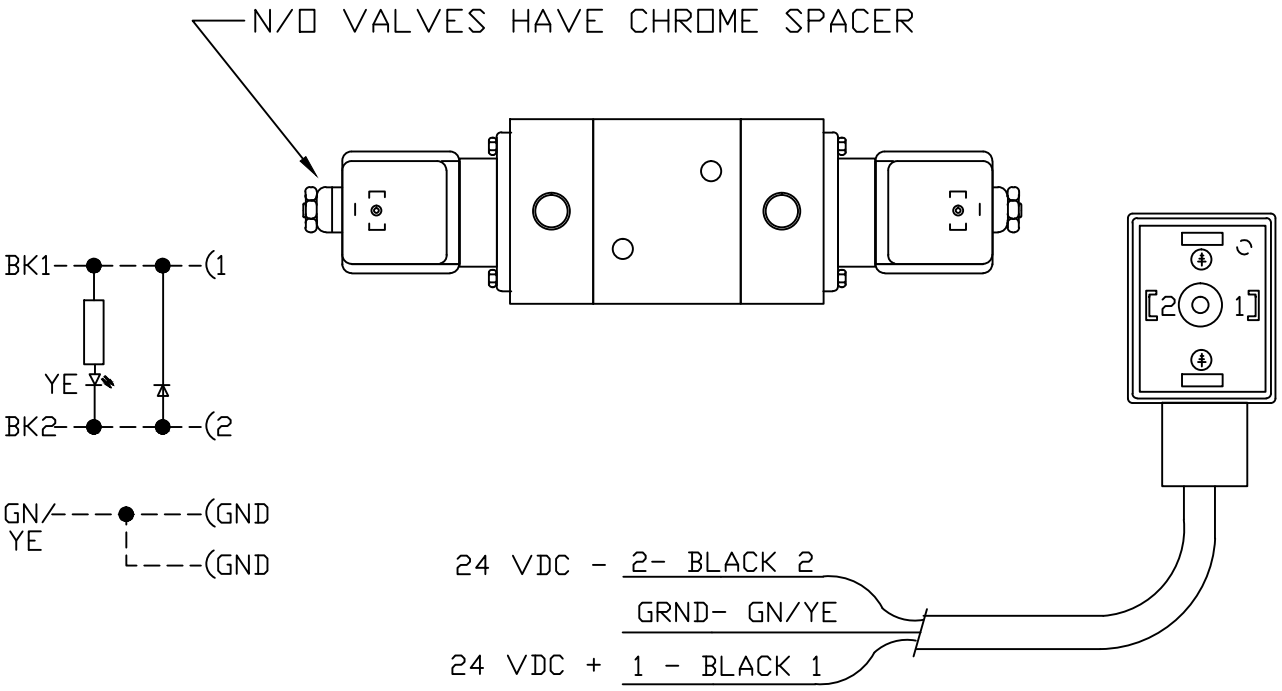








DWG. TITLE	810-065 DIMENSIONS	HTI FILTRATION	810-065	
PROJECT DESCRIPTION	CAN SEAMER FILTRATION SYSTEM	7716 Gary Watson Pt Colorado Springs CO 80915	0 / 05-10-17 / SP / SP / ORIGINAL ISSUE	
SCALE: 1:5	DRAWING NO. 810-065 / REVISION A		REV. / DATE: / DRWN BY / CHKD BY / DESCRIPTION	
			CUSTOMER: KHS	



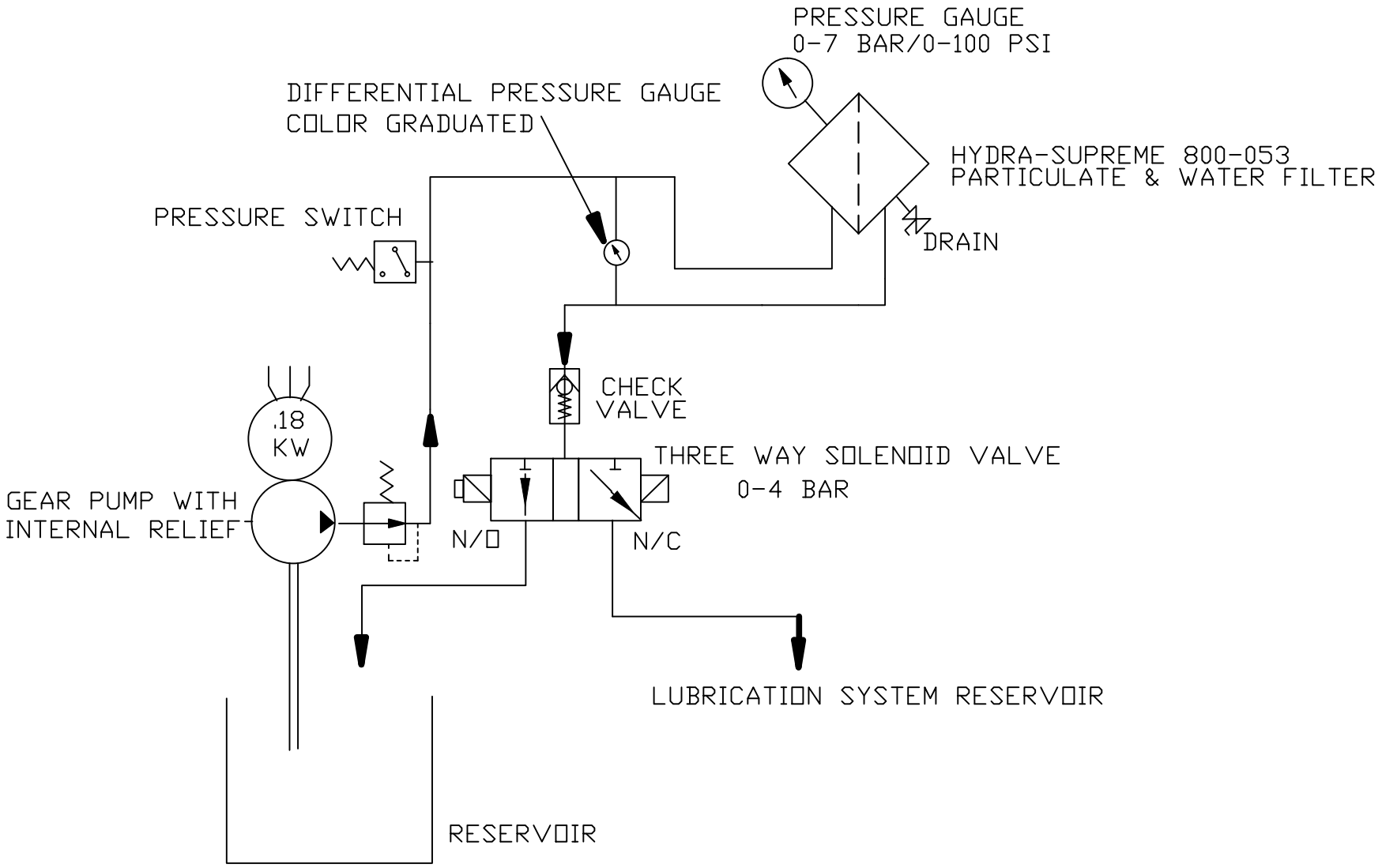
DIN CONNECTOR WITH RECTIFIER-
- HTI PART 250-019

COIL DATA:
0.417 AMPS INRUSH & HOLDING, 10 WATTS CONSTANT
COILS ARE NON-RECTIFIED-

DWG. TITLE: SOLENOID WIRING		HTI FILTRATION	250-019 DIN CONNECTOR SOLENOID VALVE WIRING
PROJECT DESCRIPTION: 430-068,074,083 SOLENOID VALVE WIRING DIAGRAM		7716 Gary Watson pt Colorado Springs Colorado, USA, 80915	
JOB NO.: —	DRAWING NO.: 430-068 WD	REVISION: 0	CUST. CONTR. NO.: —

REV.	DATE:	DRWN BY	CHKD BY	DESCRIPTION
0	12-10-05	SCP	RAH	ORIGINAL ISSUE

CUSTOMER: KHS

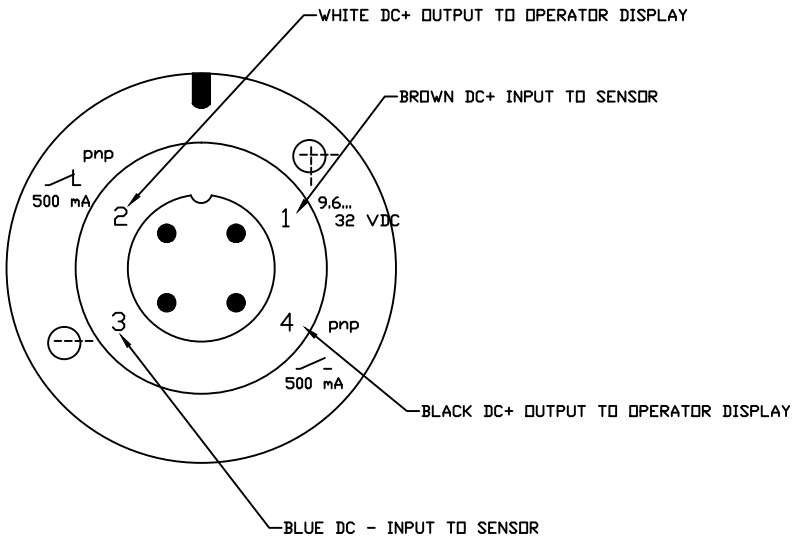


DWG. TITLE: FLOW SCHEMATIC	HTI FILTRATION	810-065 FILTRATION FLOW SCHEMATIC	
PROJECT DESCRIPTION: SEAMER PARTICULATE AND WATER REMOVAL SYSTEM	7716 Gary Watson Pt Colorado Springs CO 80915		
JOB NO.: - / DRAWING NO.: 810-065 FS / REVISION: 0 / CUST. CONTR. NO.: -		CUSTOMER: KHS	

REV.	DATE:	DRWN BY	CHKD BY	DESCRIPTION
A	08-04-2017	SP	RH	ADD CHECK VALVE
0	04-22-2017	SP	RH	ORIGINAL ISSUE

WARNING LIGHT CIRCUIT

22 AWG BLACK PUR, 5 M length



MOTOR CIRCUIT

16-4 SEOOW CABLE 4 M LENGTH

FAN
END

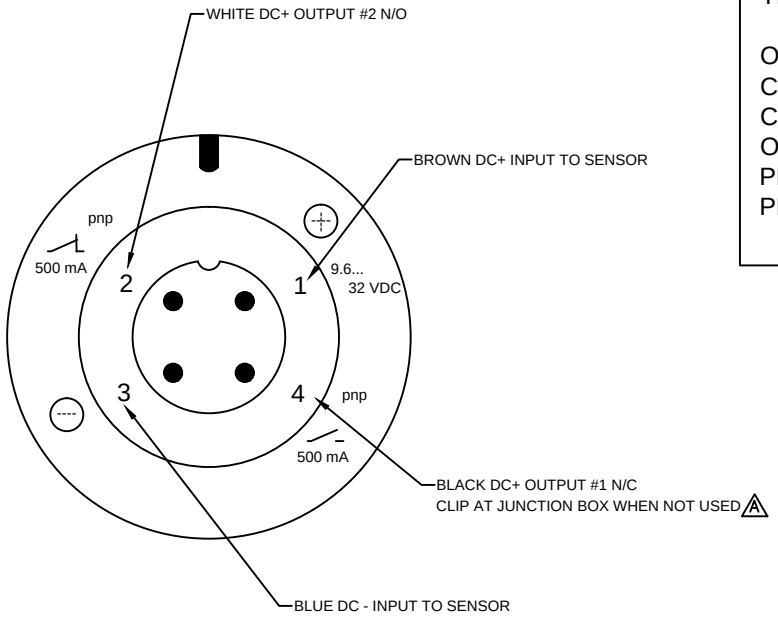
BLACK	RED	WHITE
L1	L2	L3
W1	VI	U1
O	O	O
T3	T2	T1
W5	V5	U2
O	O	O
T6&9	T5&8	T4&7

SHAFT
END

M.G.M. MOTORS
.25 HP/.18 KW
1120 RPM/900 RPM

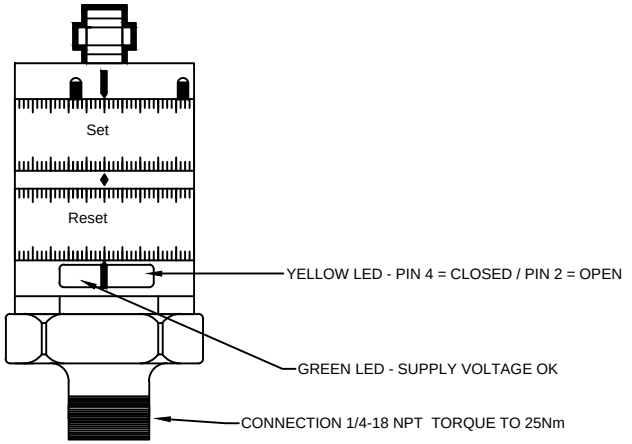
DWG. TITLE: 810-065 WIRING	HTI FILTRATION	810-065 WIRING SCHEMATIC
PROJECT DESCRIPTION: METRIC 3 PHASE FILTER	7716 Gary Watson Pt Colorado Springs CO 80915	CUSTOMER: KHS
DRAWING NO.: 810-065 WS / REVISION: 0 / CUST. CONTR. NO.: –		

REV.	DATE:	DRWN BY	CHKD BY	DESCRIPTION
–	–	–	–	–
0	08-03-17	SP	SP	ORIGINAL ISSUE



TECHNICAL DATA -

OPERATING VOLTAGE -	9.6 TO 32 VDC
CURRENT RATING (mA) -	500
CURRENT CONSUMPTION -	<25
OPERATING TEMPERATURE -	-25 TO 80 C
PROTECTION -	IP 67 / III
PRESSURE RANGE-	0...10 BAR 0...145 PSI



NOTE:
USE 620-005 RIGHT ANGLE CONNECTOR
M12 micro DC (4 pin) 5m 22 AWG, Black PUR jacket

USE 620-006 CLEAR COVER

DWG. TITLE
PRESSURE SWITCH ILLUSTRATION

PROJECT DESCRIPTION
PRESSURE SWITCH 620-004

JOB NO.	DRAWING NO.	REVISION	CUST. CONTR. NO.
–	620-004	A	–

HTI
FILTRATION
7716 GARY WATSON PT
COLORADO SPRINGS
CO 80915

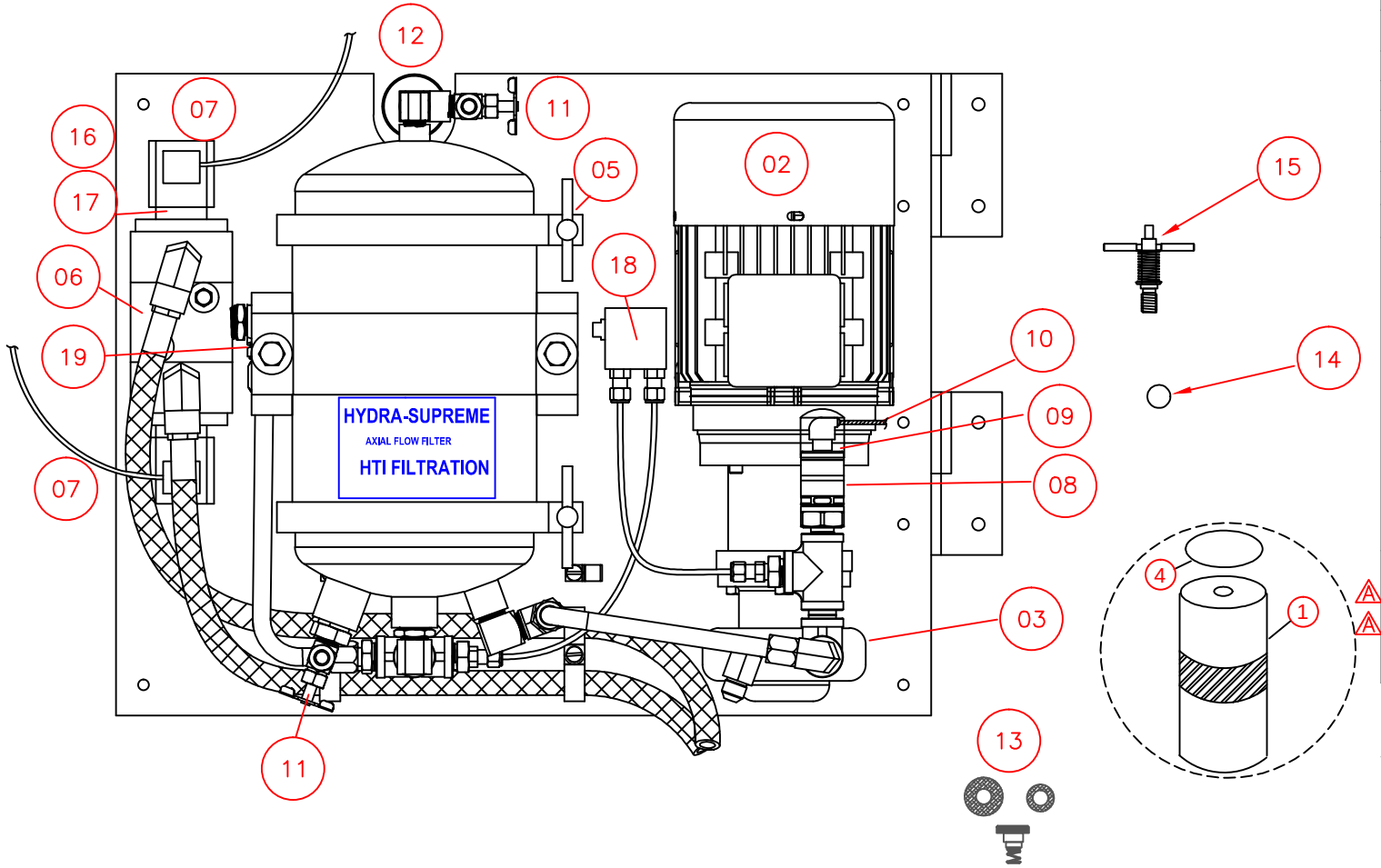
REV.	DATE:	DRWN BY	CHKD BY	DESCRIPTION
A	02-20-24	SP	SP	ADD NOTATION
0	08-10-12	SP	SP	ORIGINAL ISSUE

CUSTOMER

TROUBLESHOOTING GUIDE
HTI FILTRATION SYSTEM
KHS MODEL 810-065

When using this guide please remember that all pressure readings are to be taken with the system at normal operating temperatures.

SYMPTOM	CAUSE	CORRECTIVE ACTION
ERRATIC FLOW RATE, BUBBLES IN OIL STREAM	AIR LEAK IN INLET FITTING	CHECK FITTINGS FOR TIGHTNESS AND INTEGRITY,
	CUT OR PINCHED FEED HOSE	VISUALLY CHECK INLET HOSE FOR DEFECTS
	LEAKING PRESSURE RELIEF VALVE COVER GASKET	REPLACE GASKET IF ACORN OR ADJUSTER NUT HAS BEEN MOVED
EXCESSIVE INITIAL PRESSURE (ABOVE 40PSI)	OUTLET PIPING RESTRICTION	CHECK HOSE FOR RESTRICTION OR A CLOSED VALVE
	OIL TOO THICK (OVER 750 SUS @100°F)	CHECK OIL VISCOSITY (MAX: 750 SUS @100°F)
	OIL RUNS TOO COLD-OIL DOESNT' GET OVER 80' F.	CHANGE TO LIGHTER GRADE OF OIL, INSTALL HEATER
LOW FLOW RATE WITH LOW PRESSURE	AIR BUBBLE IN PUMP	OPEN AIR VENT ON CANISTER AND THEN, RESTART PUMP
	INSUFFICIENT MOTOR POWER	CHECK FOR PROPER PUMP VOLTAGE AND ROTATION
	OIL BYPASSING THROUGH RELIEF VALVE	CONFIRM THAT RELIEF VALVE HAS NOT BEEN TAMPERED WITH
LOW FLOW RATE WITH HIGH PRESSURE	LOADED FILTER	REPLACE FILTER ELEMENT
	RESTRICTED OUTLET LINES, CLOSED OUTLET VALVE	CHECK AND CLEAR RETURN LINES CONFIRM VALVE IS OPEN
PRESSURE ABOVE 75 PSI	RELIEF VALVE SET TOO HIGH	RE-SET RELIEF VALVE TO 75 PSI
SHORT FILTER LIFE	EXCESSIVE WATER IN OIL	CHECK SEALS, MAKE SURE COVERS ARE ALL IN PLACE
LEAK AT LID CLAMP	CUT OR ERODED SEAL	REPLACE AS NEEDED
	LID NOT TIGHT	TIGHTEN CLAMP BOLT
WARNING LIGHT COMES ON BELOW 60 PSI OR ABOVE 75 PSI	PRESSURE SWITCH SET WRONG	RESET PRESSURE SWITCH
11-06-19		



REPLACEMENT PARTS

ITEM NO.	DESCRIPTION	DWG. NO
1	FILTER ELEMENT	800–053
2	MOTOR 3 PHASE 50/60 HZ	780–031
3	PUMP	770–013
4	O–RING LID SEAL	450–001
5	LID CLAMP	540–005
6	SOLENOID VALVE– VDC	430–074
7	DIN CONNECTORS	250–019
8	PRESSURE SWITCH	620–004
9	PRESSURE SWITCH COVER	620–006
10	PRESSURE SWITCH CABLE	620–014
11	DRAIN COCK	430–004
12	PRESSURE GAUGE	610–025
13	PUMP SEAL KIT–VITON	710–014
14	T–HANDLE SEAL	450–003
15	T–HANDLE	860–001
16	VALVE REBUILD KIT	430–072
17	SOLENOID VALVE COIL DC	430–087
18	DIFF. PRESSURE GAUGE	610–027
19	CHECK VALVE	430–089
20		

DWG. TITLE
810–065 PARTS LIST

PROJECT DESCRIPTION
CAN SEAMER FILTRATION SYSTEM

JOB NO.	DRAWING NO.	REVISION	CUST. CONTR. NO.
–	810–065	A	–

HTI FILTRATION
7716 Gary Watson Pt
Colorado Springs
CO 80915

810–065

REV.	DATE:	DRWN BY	CHKD BY	DESCRIPTION
A	08–04–17	SP	SP	DP GAUGE #, CHECK VALVE
0	05–10–17	SP	SP	ORIGINAL ISSUE

CUSTOMER
KHS

HTI FILTRATION INC.

7716 Gary Watson Pt. • Colorado Springs, CO 80915 • 719.490.8800 • sales@htifiltration.com

STANDARD WARRANTY

This filter system was inspected before shipment from our plant. To the original purchaser of this system, HTI Filtration warrants its products free from defects in material and workmanship for a period of one (1) year from date of purchase.

HTI Filtration makes no other express warranty and excludes (and buyer waives) any and all implied warranties including, without limitation to, implied warranties in connection with the design, sale, merchantability or fitness of the goods for any particular use or purpose.

In order for any claim under this warranty to be valid, HTI Filtration must receive notice in writing from the buyer within a reasonable time period, not to exceed thirty (30) calendar days after any defect is discovered. The claim must include a detailed report of the conditions of use at the time of discovery of defect. Parts which fail or become defective during the warranty period (except as a result of freezing, melting, improper installation, use or care), shall be replaced or repaired at HTI Filtration's option at no charge within 90 days of the receipt of the defective part, barring unforeseen delays. HTI Filtration shall in no event be responsible for the repairs made by others without the express written permission and consent of HTI Filtration.

To obtain warranty replacement or repairs, defective components or parts should be returned, freight prepaid, to place of purchase or nearest authorized service center. HTI Filtration shall not be responsible for cartage, removal and/or reinstallation labor or any other such costs incurred in obtaining warranty replacements. In no event shall HTI Filtration be responsible for any incidental or consequential damage, whether foreseeable or not and whether or not such damage occurs, or is discovered before or after repair or replacement.

The forgoing warranty does not apply to wear components, seals or filtration elements.

This warranty extends only to the original buyer and HTI Filtration makes no other warranty, expressed or implied, to other persons or entities. If buyer makes any warranty or representation inconsistent with or in addition to the warranty stated hereinabove, the buyer shall, at their own expense, defend and hold HTI Filtration harmless from any claim thereon of any nature whatsoever.