

## HU4000 SERIES HOSE END PRESSURE REFUELLING COUPLING



- Unique internal safety interlock integral to the poppet
- Six slot engagement for easier coupling location
- Independent swivel improves ease of coupling
- Improved choice of operation with three handle options
- Nose seal replaceable without depressurising
- Well proven Mk six pressure controller
- Suitable for all current aircraft types
- Robust, lightweight construction

### Proven Design Features Retained

Safety in refuelling is of paramount importance. Avery-Hardoll's unique internal safety interlock utilises the poppet as an integral part of the interlock system and is therefore not reliant on secondary interlock components. The coupling is unaffected by wear in the aircraft unit slots and tolerates a high level of wear to the lugs. In addition the design of the HU4000 does not cause excessive wear to the aircraft unit.

HU4000 series design includes a wider range of hose adaptor designs, relocation of the swivels, three new handle types, and new operating lever design.

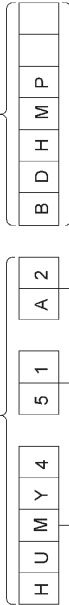
Spares and service requirements are also important in this change of design. Ease of maintenance and spares compatibility with its predecessor has been retained.

# HUMY4000 SERIES HOSE UNIT - CODING CHART

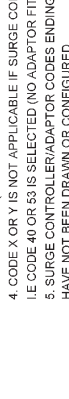
**NOTE: -**

1. CODES P, X AND Y ARE NOT APPLICABLE WHEN SURGE CONTROLLER/ADAPTOR CODE ENDS IN 0, 1, E CODE 30 IS SELECTED.
2. CODE P IS NOT REQUIRED IF RING HANDLES (CODE R) IS FITTED.
3. CODE P IS NOT APPLICABLE IF SURGE CONTROLLER/ADAPTOR CODE STARTS WITH A 0, 1, E CODE 03 IS SELECTED (NO SURGE CONTROLLER FITTED).
4. CODE X OR Y IS NOT APPLICABLE IF SURGE CONTROLLER/ADAPTOR CODE ENDS WITH A 0 OR 3, 1, E CODE 40 OR 53 IS SELECTED (NO ADAPTOR FITTED OR A - H 90° ELBOW ADAPTOR FITTED).
5. SURGE CONTROLLER/ADAPTOR CODES ENDING IN 5, 6 OR 7 (1, E CODE 35) ARE NOT STANDARD, HAVE NOT BEEN DRAWN OR CONFIGURED.
6. SURGE CONTROLLER/ADAPTOR CODES ENDING IN 5, 6 OR 7 (1, E CODE 35) SHOULD BE CONSIDERED AS SPECIAL SURGE CONTROLLERS/ADAPTORS.

**NOZZLE STRUCTURE**



**ANCILLARIES**



BASIC NUMBER	
DESCRIPTION	PART No.
LEVER OPERATED HOSE UNIT	HUMZ4566

CODE	DESCRIPTION	PART No.	CODE	DESCRIPTION	PART No.
00	NO SURGE CONTROLLER/NO ADAPTOR	NOT AVAIL	33	30psi MAX. SURGE CONTROLLER/90° ELBOW ADAPTOR	HUMZ4564
01	NO SURGE CONTROLLER/H STANDARD ADAPTOR	HUMZ4400	43	45psi MAX. SURGE CONTROLLER/H 90° ELBOW ADAPTOR	HUMZ4555
02	NO SURGE CONTROLLER/H 45° ELBOW ADAPTOR	HUMZ4402	53	50psi MAX. SURGE CONTROLLER/H 90° ELBOW ADAPTOR	HUMZ4556
03	NO SURGE CONTROLLER/H 90° ELBOW ADAPTOR	HUMZ4403	63	50psi MAX. SURGE CONTROLLER/H 90° ELBOW ADAPTOR	HUMZ4557
04	NO SURGE CONTROLLER/LIGHT REFUELLING ADAPTOR	HUMZ4401	34	30psi MAX. SURGE CONTROLLER/R STANDARD ADAPTOR	HUMZ4530
05	NO SURGE CONTROLLER/THEM PROFILE ADAPTOR (ND)	(HUMZ4404)	44	45psi MAX. SURGE CONTROLLER/R STANDARD ADAPTOR	HUMZ4531
06	NO SURGE CONTROLLER/CARTER PROFILE ADAPTOR (ND)	(HUMZ4405)	54	50psi MAX. SURGE CONTROLLER/R STANDARD ADAPTOR	HUMZ4532
07	NO SURGE CONTROLLER/45° CARTER PROFILE ADAPTOR (ND)	(HUMZ4406)	64	50psi MAX. SURGE CONTROLLER/R STANDARD ADAPTOR	HUMZ4533
30	30psi MAX. SURGE CONTROLLER/NO ADAPTOR	HUMZ4500	35	30psi MAX. SURGE CONTROLLER/THEM PROFILE ADAPTOR (ND)	(HUMZ4500 & HUMZ4404)
40	45psi MAX. SURGE CONTROLLER/NO ADAPTOR	HUMZ4501	45	45psi MAX. SURGE CONTROLLER/THEM PROFILE ADAPTOR (ND)	(HUMZ4501 & HUMZ4404)
50	50psi MAX. SURGE CONTROLLER/NO ADAPTOR	HUMZ4502	55	50psi MAX. SURGE CONTROLLER/THEM PROFILE ADAPTOR (ND)	(HUMZ4502 & HUMZ4404)
60	50psi MAX. SURGE CONTROLLER/NO ADAPTOR	HUMZ4503	65	50psi MAX. SURGE CONTROLLER/THEM PROFILE ADAPTOR (ND)	(HUMZ4503 & HUMZ4404)
21	50psi MAX. DOUBLE SURGE CONTROLLER/H STANDARD ADAPTOR	HUMZ4546	36	30psi MAX. SURGE CONTROLLER/CARTER PROFILE ADAPTOR (ND)	(HUMZ4500 & HUMZ4405)
31	30psi MAX. SURGE CONTROLLER/H STANDARD ADAPTOR	HUMZ4504	46	45psi MAX. SURGE CONTROLLER/CARTER PROFILE ADAPTOR (ND)	(HUMZ4501 & HUMZ4405)
41	45psi MAX. SURGE CONTROLLER/H STANDARD ADAPTOR	HUMZ4505	56	50psi MAX. SURGE CONTROLLER/CARTER PROFILE ADAPTOR (ND)	(HUMZ4502 & HUMZ4405)
51	50psi MAX. SURGE CONTROLLER/H STANDARD ADAPTOR	HUMZ4506	66	50psi MAX. SURGE CONTROLLER/CARTER PROFILE ADAPTOR (ND)	(HUMZ4503 & HUMZ4405)
61	50psi MAX. SURGE CONTROLLER/H STANDARD ADAPTOR	HUMZ4507	37	30psi MAX. SURGE CONTROLLER/45° CARTER PROFILE ADAPTOR (ND)	(HUMZ4500 & HUMZ4405)
32	30psi MAX. SURGE CONTROLLER/H 45° ELBOW ADAPTOR	HUMZ4550	47	45psi MAX. SURGE CONTROLLER/45° CARTER PROFILE ADAPTOR (ND)	(HUMZ4501 & HUMZ4405)
42	45psi MAX. SURGE CONTROLLER/H 45° ELBOW ADAPTOR	HUMZ4551	57	50psi MAX. SURGE CONTROLLER/45° CARTER PROFILE ADAPTOR (ND)	(HUMZ4502 & HUMZ4405)
52	50psi MAX. SURGE CONTROLLER/H 45° ELBOW ADAPTOR	HUMZ4552	67	50psi MAX. SURGE CONTROLLER/45° CARTER PROFILE ADAPTOR (ND)	(HUMZ4503 & HUMZ4405)
62	50psi MAX. SURGE CONTROLLER/H 45° ELBOW ADAPTOR	HUMZ4553			

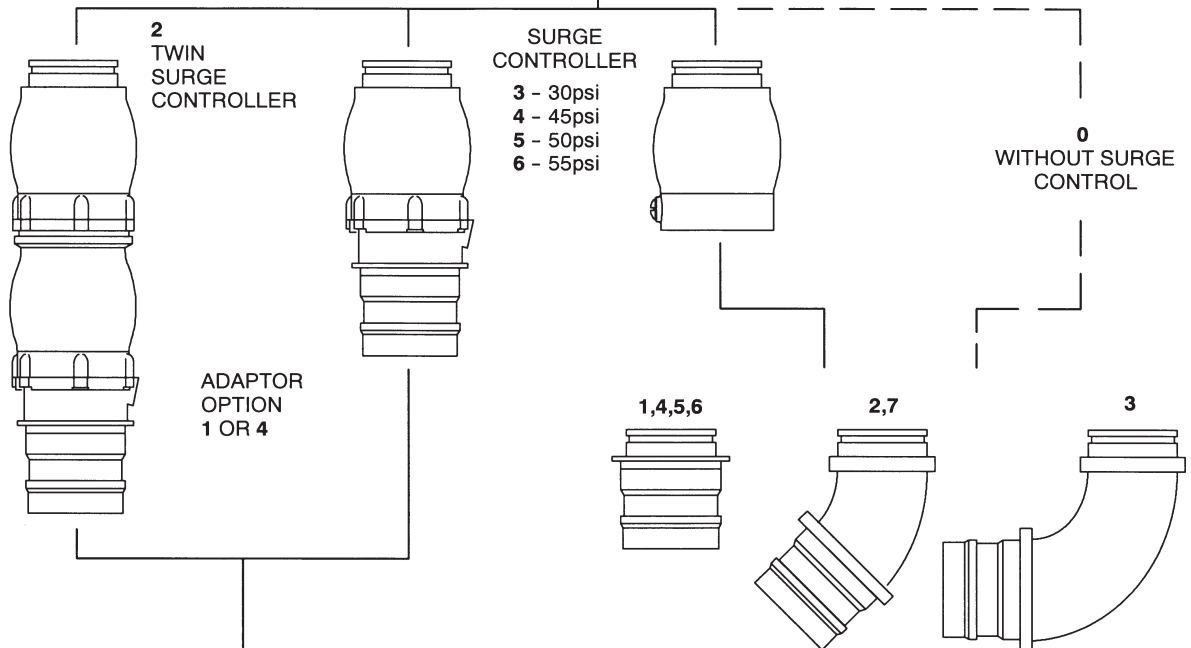
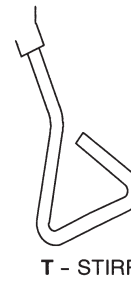
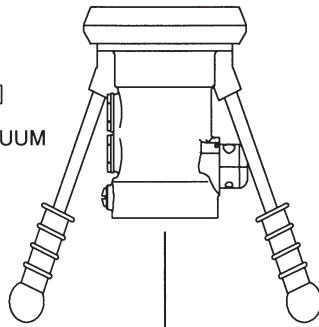
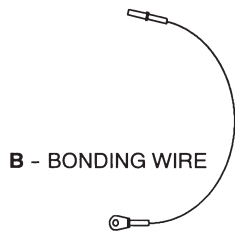
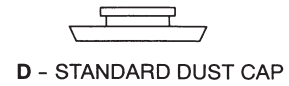
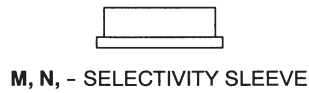
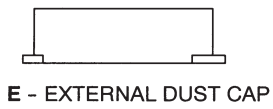
ANCILLARIES		ADD LETTERS ONLY IF ANCILLARY OPTIONS ARE REQUIRED (PLACE IN ORDER AS LISTED)	
CODE	DESCRIPTION	PART No.	REMARKS
B	BONDING CABLE	HUMZ1386	
D	DUST CAP - STANDARD	HUMZ4382	ALL BUILDS (EXTERNAL & INTERNAL - SELECTIVE AND NON SELECTIVE)
G	GAMMON JET TEST ADAPTOR AND VENT PORT ADAPTOR	HUMZ4542	FITTED AS ALTERNATIVE TO A PLUG IN THE HOSE UNIT & VENT PORT IN THE SURGE CONTR.
H	VACUUM RELIEF VALVE 10"hg	HUMZ3935-1	
J	VACUUM RELIEF VALVE 15"hg	HUMZ3935-2	
K	VACUUM RELIEF VALVE 22"hg	HUMZ3935-3	
M	SELECTIVITY, POSITIONS 1, 2 & 3	HUMZ4331	FACTORY SET TO POSITION 1
N	SELECTIVITY, POSITIONS 4 & 5	HUMZ4332	FACTORY SET TO POSITION 4
P	PROTECTION RING	HUPZ3850	NOT REQUIRED IF RING HANDLES ARE FITTED. CANNOT BE USED ON BUILDS WITH NO SURGE CONTROLLER.
R	RING HANDLE	HUAZ4357	FITTED IN PLACE OF STANDARD STICK HANDLES
S	STIR/UP HANDLE	HUAZ4358	
W	NO HANDLES FITTED		
C	STICK HANDLE (IFT AS STANDARD)	HUMZ4353	FITTED AS STANDARD
X	60 MESH STRAINER (INSTEAD OF 100 MESH STRAINER)	HUSZ4422	(SHORT) NO SURGE CONTR.
Y	100 MESH STRAINER (FITTED AS STANDARD)	HUSZ4421	(LONG) WITH SURGE CONTR.
Z	EXTREME COLD WEATHER SEALS	PHL4010	(LONG) WITH SURGE CONTR. REF. ONLY (FLURO-SILICON SEALS REPLACING STANDARD FLURO-CARBON SEALS) (FITTED AS KIT-SET)

**HOSE CONNECTORS**

CODE	DESCRIPTION	THREAD OPTIONS AND CODES							
		1	2	3	6	7	8		
A	LIGHT WEIGHT QUICK DISCONNECT	2" BSP	2.5" BSP	3" BSP	2" NPT	3" NPT			
L	QUICK DISCONNECT ISOLATING VALVE LOCKING SCREW TYPE	HUMZ2671	HUMZ4561	HUMZ4562	HUMZ2673	HUMZ2674	HUMZ2675	HUMZ2676	HUMZ2677
S	QUICK DISCONNECT - STANDARD								
Q	SWIVEL								
V	QUICK DISCONNECT ISOLATING VALVE PUSH BUTTON TYPE	HUMZ2687	HUMZ2688	HUMZ2689	HUMZ2690	HUMZ2691	HUMZ2692	HUMZ2693	HUMZ2694

NOTE: ...INCLUDE THESE COLUMNS ONLY WHEN SURGE CONTROLLER/ADAPTOR CODES END IN 1, 2 OR 3 (1, E CODE 31)

Example Shown: HUMY451BDHMP  
 Standard Nozzle with 50 psi, Standard Adaptor profile, 2.5" BSP, Lightweight Quick Disconnect, Bonding Cable, Dust Cap, Vacuum Relief Valve, Selectivity and Protection Ring.

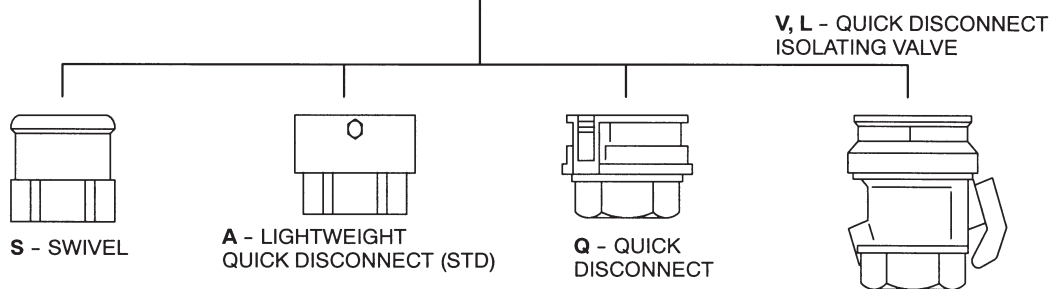


**100 MESH STRAINER (STANDARD ON A,Q,V,L)**



**or 60 MESH ALTERNATIVE (X)**

ADAPTOR PROFILE OPTIONS	
1	AH STANDARD
2	AH 45° ELBOW
3	AH 90° ELBOW
4	FR PROFILE
5	THIEM PROFILE
6	CARTER PROFILE
7	CARTER PROFILE 45° ELBOW



## SPECIFICATION

### PRESSURE RATING

Max Working Pressure: 10.3 bar(150psi)  
 Test Pressure: 15.5 bar (225 psi)  
 Max. Flow Rate: 2275 lpm  
 500 lpgm  
 600 US gpm

### PRESSURE DROP (including Aircraft Adaptor)

Nozzle with Quick-Disconnect and 100 mesh strainer  
 at 1895 lpm 1.03 bar (14.9 psi)

As above plus Surge-Controller 1.79 bar (26.0 psi)

### STRENGTH

Although over a kilo lighter than its predecessor the HU4000 retains its basic strength and has been rigorously tested to ensure safe operation under normal operating conditions.

### COMPATIBILITY

British Standard Aerospace Specification 4C14  
 International Standards Organisation ISO R45NATO  
 Stanag 3105 Designed to meet the requirements of  
 MIL-N-5877E

### LENGTH

Complete nozzle, surge controller  
 and quick disconnect 370 mm (14.6 in.)

### MATERIALS

Those in contact with the fuel are anodised aluminium alloy, stainless steel, PTFE Viton and high nitrile rubber.

### OPERATING TEMPERATURES

-20 deg C to 60 deg C (-4 deg F to +140 deg F)

### COLD WEATHER REQUIREMENTS

Special seal kits available for temperatures down to  
 -40°C.

### WEIGHTS

COMPLETE NOZZLE, SURGE CONTROLLER  
 AND LIGHT WEIGHT QUICK DISCONNECT

5.3Kg (11.6 lb)

NOZZLE ASSY

2Kg 50g

HOSE CONNECTOR ASSY

640g

SURGE CONTROL/ADAPTOR

1Kg 570g

STICK HANDLE ASSY (1 SET)

680g

DUST CAP ASSY

200g

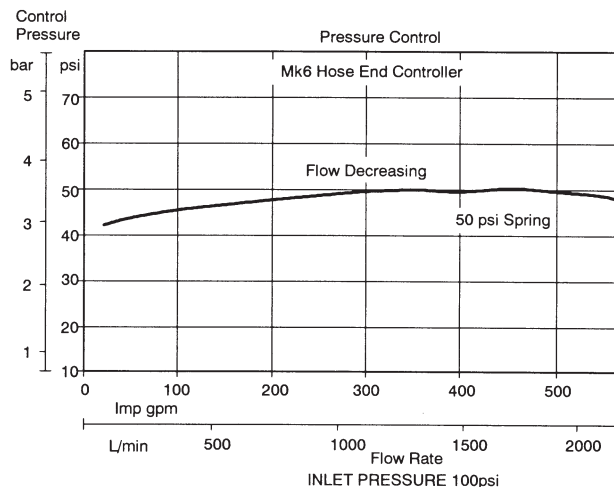
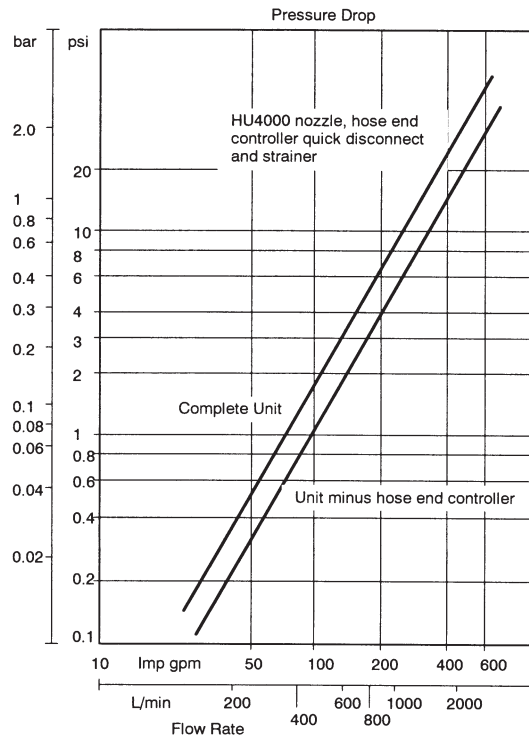
PROTECTION RING

360g

VACUUM RELIEF VALVE

60g

## TYPICAL PERFORMANCE CURVES



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