

HMS/HLS/HES Series Heavy Duty Limit Switches

Features

- Heavy duty zinc die cast body
- Conform to EN 60947-5-1, IEC 60947-5-1, UL508, NEMA250, CSA22.2 Standards
- Wide range of actuator available
- High repeatability (0.03mm for linear travel)
- Available in three body styles: compact, standard and explosion-proof

Electrical Ratings

Designation & Utilization Category	IEC 60947-5-1 / EN 60947-5-1					VA rating	
	Rated operational current I _e (A) at rated operational voltage U _e					Make	Break
	120V	240V	380V	480V	600V		
AC15 A600	6	3	1.9	1.5	1.2	7200	720
DC13 Q300	125VDC 250VDC 0.55 0.27					69	69

Specifications

Operating Speed	0.05mm-2m/sec
Rated Current/Voltage	10A/600V AC (EN60947-5-1) AC15 A600 / DC13 Q300
Service Life	Mechanically 10 millions (operations) Electrically 1 million (operations)
Operating Temperature	-28.9~+85°C (-20~185°F)
Vibration Resistance	25gn (10..150 Hz, 11ms) per IEC60068-2-6
Shock Resistance	60gn (9ms) per IEC 60068-2-27
Dielectric Strength	2200VAC for 1 minute
Short Circuit Protection	10A fuse
Terminal Wire Size	12-22AWG (2.05-0.644mm ²)
Degree of Protection	IP 67 conforming to IEC 60529, NEMA Types 2, 4, 6, 6P, 12, 13

HMS Compact



HLS Standard



HES Explosion-Proof



Selection Guide:

HLS	1	A	04	A	-	F
Body Styles	Contact Block	1/2NPT Conduit (Contact us for other types)	Head Style	Applied on to Lever Arms Style		Rubber seal type
— HLS: Standard Body	1: SPDT (1NO/1NC) Snap action			B: Standard		— Blank: Standard
— HMS: Short body style	2: DPDT (2NO/2NC) Snap action			A: High precision		— F: Florite Rubber
— HES: Explosion-Proof	3: DPDT (2NO/2NC) 2 stages		— 2 digit or 2 digit +1 letter	N: Low torque		
	4: DPDT (2NO/2NC) center neutral operation			D: High precision low torque		
				C: Maintained		
				TB: Neutral Position		
				TA: Neutral Position (High Precision)		

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Plunger type

01 Style



11 Style



12 Style

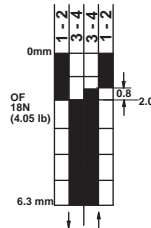
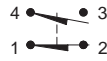


13 styles



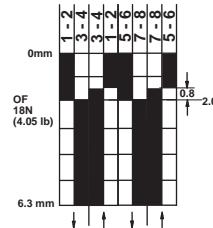
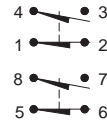
HLS/HMS/HES-1A

1NO/1NC



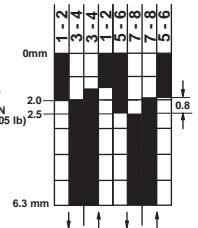
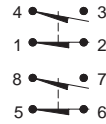
HLS/HMS/HES-2A

2NO/2NC



HLS/HMS/HES-3A

2NO/2NC (2-stages)



* Note: Operating Force (OF) is 31.1N(7 lb) for Plunger type 01 style.

Side Plunger type

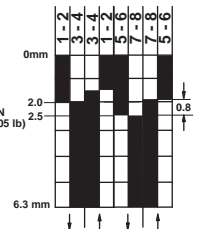
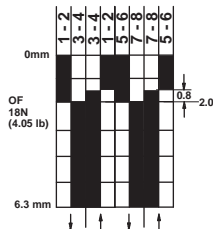
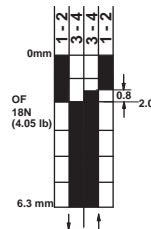
11H styles



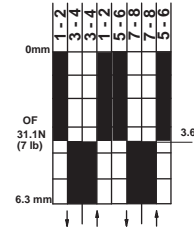
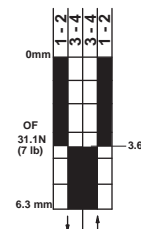
12H styles



13H styles



Side Plunger (Maintained) type 10H styles



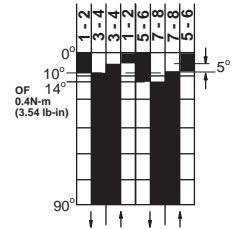
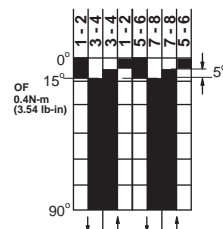
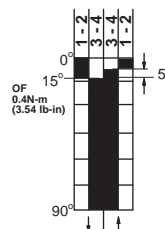
Spring coil type



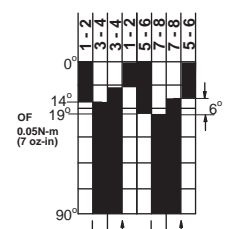
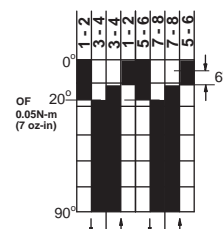
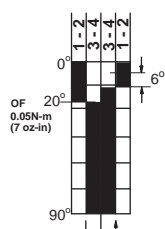
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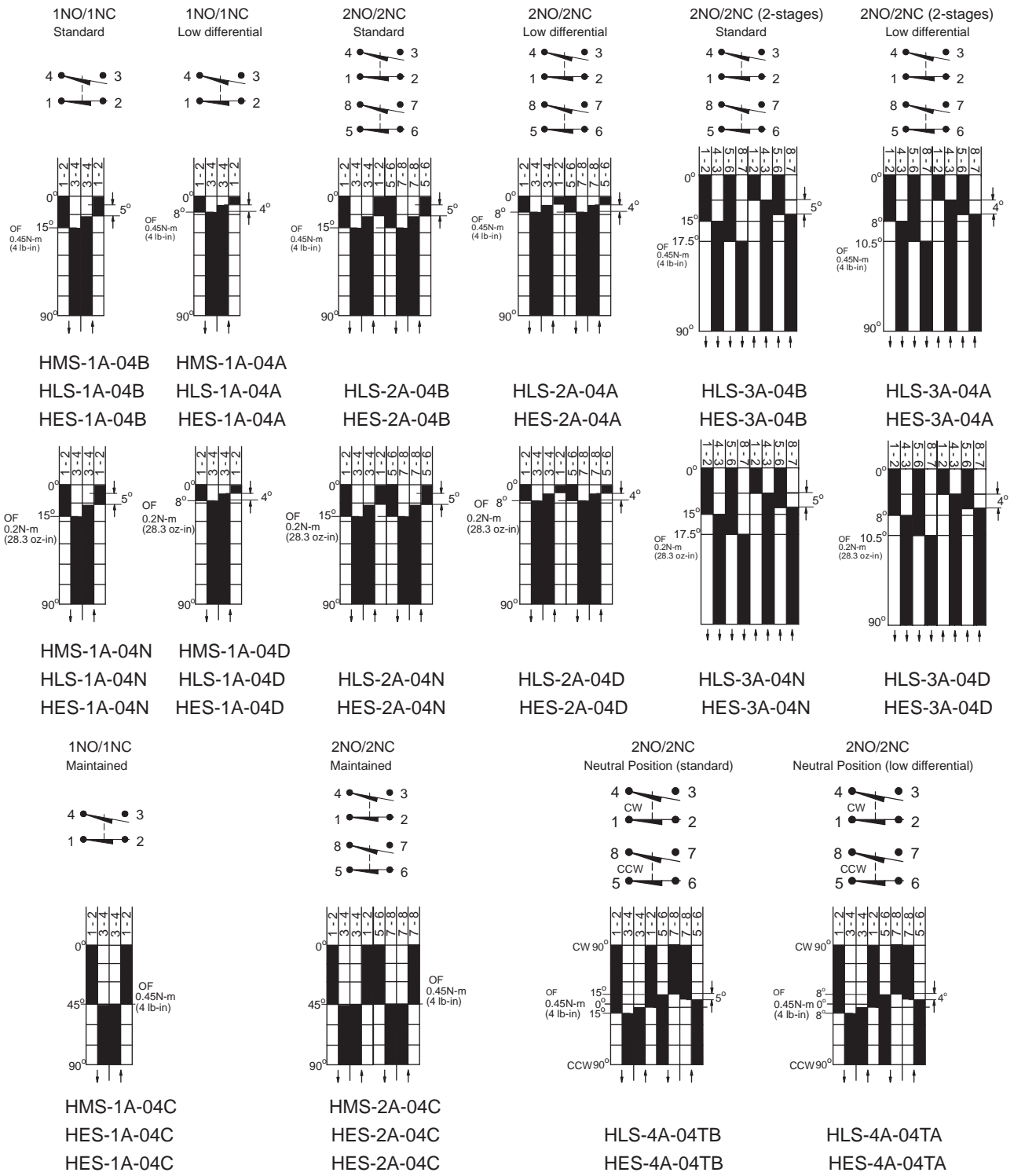


Cat Whisker type 68 Style

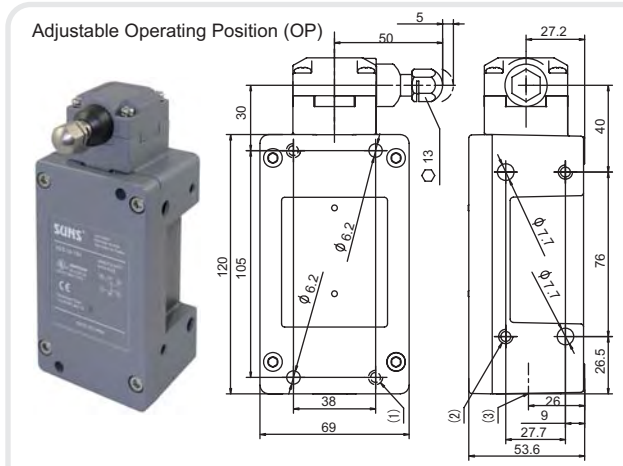


HMS/HLS/HES Series Heavy Duty Limit Switches

Travel Diagram for Rotary Lever Styles

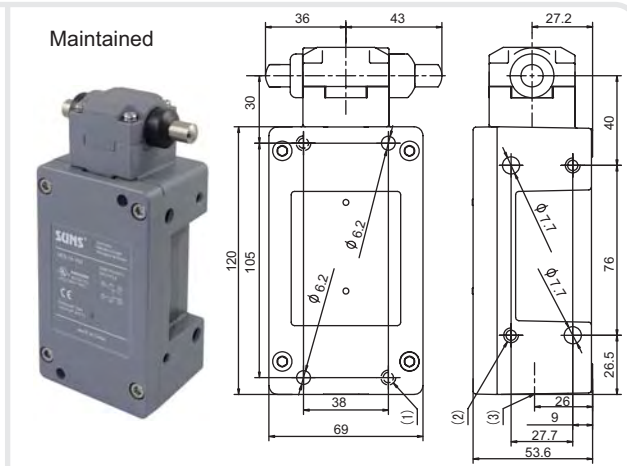


HES Series Heavy Duty Limit Switches(Explosion-Proof)



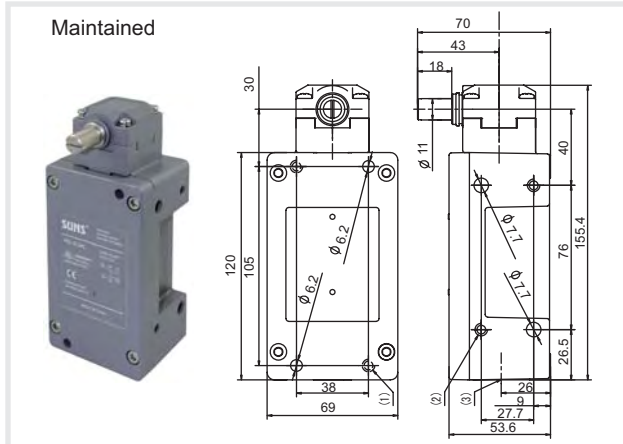
Order Code

- HES-1A-13H: 1NO/1NC
- HES-2A-13H: 2NO/2NC
- HES-3A-13H: 2NO/2NC (2-stage)



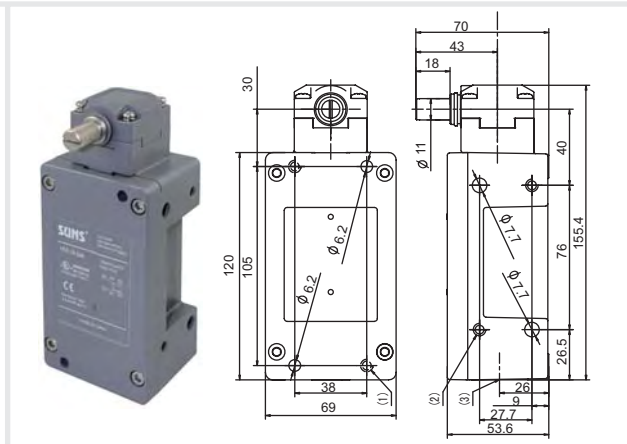
Order Code

- HES-1A-10H: 1NO/1NC
- HES-2A-10H: 2NO/2NC



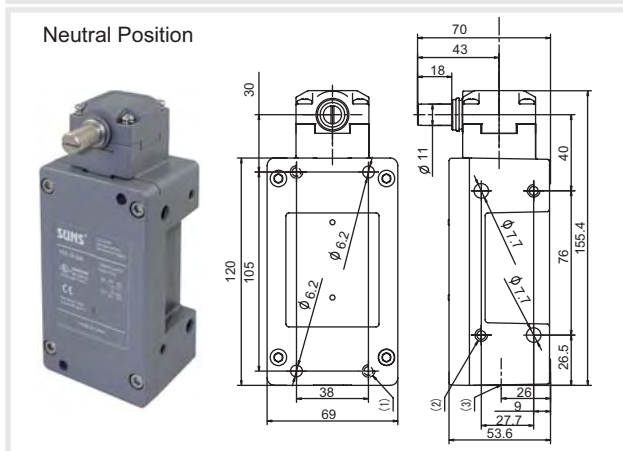
Order Code

- HES-1A-04C: 1NO/1NC
- HES-2A-04C: 2NO/2NC



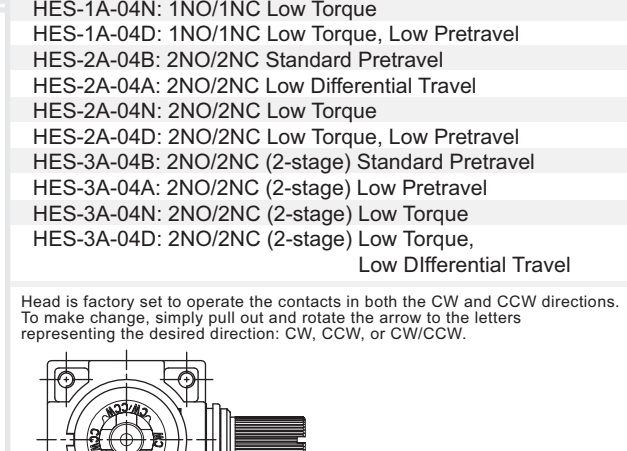
Order Code

- HES-1A-04B: 1NO/1NC Standard Pretravel
- HES-1A-04A: 1NO/1NC Low Pretravel
- HES-1A-04N: 1NO/1NC Low Torque
- HES-1A-04D: 1NO/1NC Low Torque, Low Pretravel
- HES-2A-04B: 2NO/2NC Standard Pretravel
- HES-2A-04A: 2NO/2NC Low Differential Travel
- HES-2A-04N: 2NO/2NC Low Torque
- HES-2A-04D: 2NO/2NC Low Torque, Low Pretravel
- HES-3A-04B: 2NO/2NC (2-stage) Standard Pretravel
- HES-3A-04A: 2NO/2NC (2-stage) Low Pretravel
- HES-3A-04N: 2NO/2NC (2-stage) Low Torque
- HES-3A-04D: 2NO/2NC (2-stage) Low Torque, Low Differential Travel



Order Code

- HES-4A-04TA: 2NO/2NC (Low Pretravel)
- HES-4A-04TB: 2NO/2NC



Head is factory set to operate the contacts in both the CW and CCW directions. To make change, simply pull out and rotate the arrow to the letters representing the desired direction: CW, CCW, or CW/CCW.

* Note; 1) 2 x 1/4-20UNT (depth 0.63") for back side mounting
 2) 2 x 1/4-20UNT (depth 0.32") on the side for side mounting
 3) Conduit opening: 1/2NPT (standard), 3/4NPT on special request.

HES Series Heavy Duty Limit Switches(Explosion-Proof)

<p>Order Code HES-1A-66: 1NO/1NC HES-2A-66: 2NO/2NC HES-3A-66: 2NO/2NC (2-stage)</p>	<p>Order Code HES-1A-68: 1NO/1NC HES-2A-68: 2NO/2NC HES-3A-68: 2NO/2NC (2-stage)</p>

<p>Order Code HES-1A-69: 1NO/1NC HES-2A-69: 2NO/2NC HES-3A-69: 2NO/2NC (2-stage)</p>	<p>Order Code HES-1A-00: 1NO/1NC HES-2A-00: 2NO/2NC HES-3A-00: 2NO/2NC (2-stage)</p>

* Note; 1) 2 x 1/4-20UNT (depth 0.63") for back side mounting
 2) 2 x 1/4-20UNT (depth 0.32") on the side for side mounting
 3) Conduit opening: 1/2NPT (standard), 3/4NPT on special request.

Levers for Rotary Heads (HMS/HLS/HES Heavy Duty Limit Switches)



Cast Aluminum Lever Arms with Roller

Add '-P' suffix for nylon roller (following part numbers are with steel roller)

Arm Length* in. (mm)	Roller Diameter in. (mm)	Roller Width in. (mm)	Part Number
1.38 (35)	0.75 (19)	0.25 (6.3)	H-04B1
		0.63 (16)	H-04B2
	0.63 (16)	0.25 (6.3)	H-04B3
		0.63 (16)	H-04B4
		1 (25.4)	H-04B5
1.5 (38)	0.75 (19)	0.25 (6.3)	H-04C1
		0.63 (16)	H-04C2
	0.63 (16)	0.25 (6.3)	H-04C3
		0.63 (16)	H-04C4
2 (51)	0.75 (19)	0.25 (6.3)	H-04D1
		0.63 (16)	H-04D2
	0.63 (16)	0.25 (6.3)	H-04D3
		0.63 (16)	H-04D4
2.5 (63.5)	0.75 (19)	0.25 (6.3)	H-04E1
		0.63 (16)	H-04E2
	0.63 (16)	0.25 (6.3)	H-04E3
		0.63 (16)	H-04E4
3 (76)	0.75 (19)	0.25 (6.3)	H-04F1
		0.63 (16)	H-04F2
	0.63 (16)	0.25 (6.3)	H-04F3
		0.63 (16)	H-04F4

* Mounting hole center to roller center distance

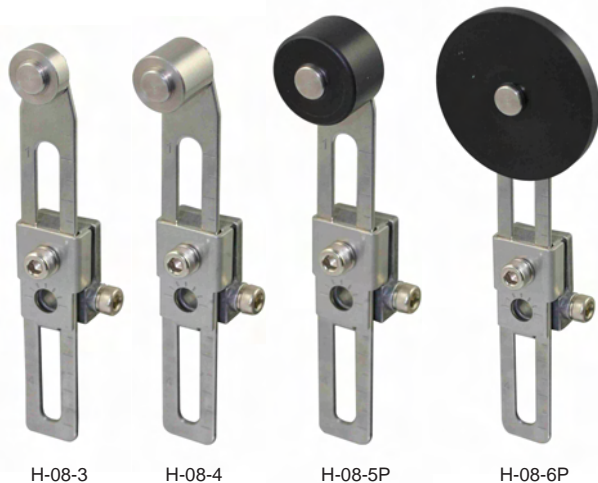


90° Forked Cast Aluminum Lever Arms with Roller

Add '-P' suffix for nylon roller (following part numbers are with steel roller)

Arm Length* in. (mm)	Roller			Part Number
	Roller Position	Diameter in. (mm)	Width in. (mm)	
1.5 (38)	Rollers on same side	0.75 (19)	0.25 (6.3)	H-05-1
		0.63 (16)	0.25 (6.3)	H-05-3
	R.H. Rollers on opposite side	0.75 (19)	0.25 (6.3)	H-05-1RH
		0.63 (16)	0.25 (6.3)	H-05-3RH
	L.H. Rollers on opposite side	0.75 (19)	0.25 (6.3)	H-05-1LH
		0.63 (16)	0.25 (6.3)	H-05-3LH

* Mounting hole center to roller center distance



Adjustable Length Lever Arm with Steel Roller

Lever Length* in. (mm)	Roller Dia. in. (mm)	Roller Width in. (mm)	Part Number
Non-bendable, adjustable from 0.88 (22) to 4 (101)	0.63 (16)	0.25 (6.3)	H-08-3
	0.63 (16)	0.63 (16)	H-08-4
Bendable, adjustable from 0.88 (22) to 4 (101)	0.63 (16)	0.25 (6.3)	H-08B-3
	0.63 (16)	0.63 (16)	H-08B-4

Adjustable Length Lever Arm with Nylon Roller

Lever Length* in. (mm)	Roller Dia. in. (mm)	Roller Width in. (mm)	Part Number
Non-bendable, adjustable from 0.88 (22) to 4 (101)	0.63 (16)	0.25 (6.3)	H-08-3P
	1 (25.4)	0.63 (16)	H-08-5P
Bendable, adjustable from 0.88 (22) to 4 (101)	0.63 (16)	0.25 (6.3)	H-08B-3P
	1.0 (25.4)	0.63 (16)	H-08B-5P
	2 (51)	0.25 (6.3)	H-08B-6P

* Mounting hole center to roller center distance

Levers for Rotary Heads (HMS/HLS/HES Heavy Duty Limit Switches)



Rod Type Lever Arms

Description	Length in. (mm)	Part Number
Stainless Steel Rod	10 (254)	H-07-10
Spring Rod, Steel	12 (304)	H-07S-12
Spring Rod, Delrin	12 (304)	H-07P-12
Looped Delrin Rod Arm	-	H-06