



Client:	<i>Project Title:</i> “DESIGN, SUPPLY, DELIVERY, INSTALLATION, TRANSPORTATION, TESTING, INSPECTION AND COMMISSIONING OF MARINE LOADING ARMS					Contractor:  APAK PETROKIMYA
Document Title:	Datasheet for Loading Arm (LA-301)					Contract No.
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DATASHEET FOR LOADING ARM (LA-----)


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2		Issued for Approval			
1		Issued for Approval			
0		Issued for Approval			
Rev.	Date	Purpose of Issue	Prepared	Checked	Approved


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A1. Product information and operational conditions

Plant Location			
Jetty Number			
Arm Tag Number			
Arm Quantity			
	Parameter	Units	
Design Conditions	Product name	–	
	Phase (liquid, gas, two phase)	–	
	Fluid Service	–	
	Normal flow rate	m ³ /hr	
	Design temperature, maximum	°C	
	Design temperature, minimum	°C	
	Design pressure, maximum	barg	
	Design pressure, minimum	barg	
	Maximum Allowable Velocity	m/s	
	Corrosion Allowance	mm	
Operating Conditions/Product Characteristics	Operating temperature	°C	
	Operating pressure	barg	
	Velocity	m/s	
	Viscosity, maximum	cP	
	Viscosity, minimum	cP	
	Flash point, maximum	°C	
	Flash point, minimum	°C	
	Atmospheric boiling point	°C	
	Density, maximum	kg/m ³	
	Density, minimum	kg/m ³	


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A2. Environmental data			
	Chart datum		m
Water Level Variation	Distance top of jetty to highest Water level (F)		m
	Distance top of jetty to lowest water level (G)		m
Design Wind Velocities	Maximum wind speed		m/s
	Stored (Short Term)		m/s
	Manoeuvring/connected (Long Term)		m/s
Earthquake Design	Design for earthquakes		
	Applicable earthquake design code		
	Earthquake acceleration - vertical direction		m/s ²
	Earthquake acceleration - horizontal direction		m/s ²
	Additional earthquake design requirements:		
Ambient temperature	Minimum		°C
	Maximum		°C
Solar	Solar radiation temperature		°C
Ice Load Design	Design for ice loads		
	Thickness of the ice build up on all components in cold climate		mm
	Thickness of the ice build up on product carrying components		mm

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A3. Ship and Manifold Details

Ship deadweight (min/Max)	Ton	
Cargo capacity		
Height of ship's deck above water level (freeboard)	m	
Height of manifold flange centre above water level (min/Max)	m	
Distance of manifold from ship's side (setback) (min/Max)	m	
Number of product manifolds	–	
Distance between manifold flange centres	–	
Manifold flange rating	lb	
Manifold diameter (nominal)	in	

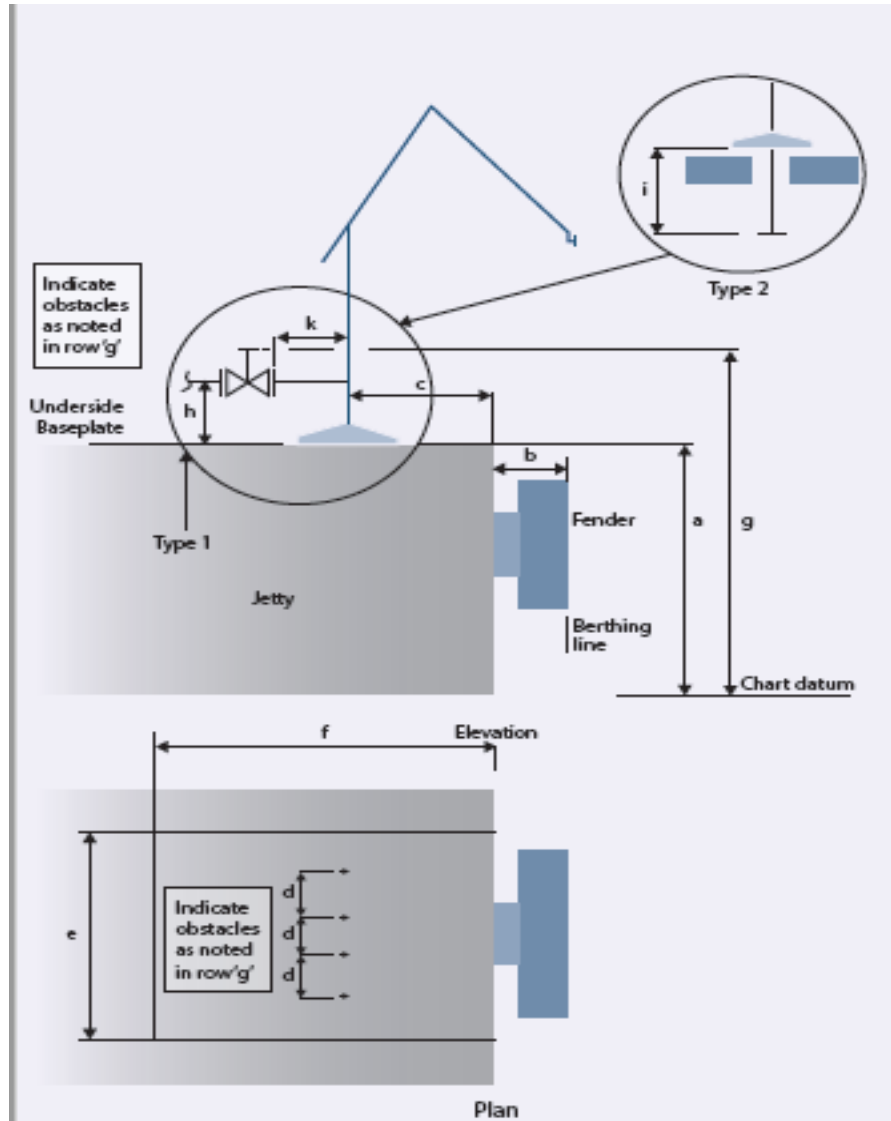
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A4. Jetty Design

Chart datum		
	Underside of the baseplate above chart datum	mm
a	Jetty deck level above chart datum	mm
b	Jetty face to berthing line - mini (compressed fender)	mm
	Jetty face to berthing line - maxi (uncompressed fender)	mm
c	Jetty face to riser centre	mm
d	Distance between riser centres	mm
e	Available jetty length	mm
f	Available jetty width	mm
	Height of inlet flange above jetty	mm
	Jetty face to arm base plate height (Pedestal)	mm

NOTE-1: These items will be finalized after receiving final data from the Client.


Figure A4: Jetty design dimensions




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A5. Berth electrical supply and safety

ELECTRICAL SUPPLY FOR:	VOLTS	Hz	AC	DC	NUMBER OF PHASES OR WIRES		
Electric motors							
Logic/trip system							
Electrical instruments							
Electro-hydraulic components							
UPS power feed by client							
Hazardous area classification, including temperature	<i>Zone 1, IIB, T3</i>						


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A6. Arms Data			
Arm Type		Self supported - Hydraulic powered Arm	
ARM DIMENSIONS	Nom. Diameter	in	
	Arm's base riser length	mm	
	Inboard Arm Length	mm	
	Outboard Arm Length	mm	
	Triple swivel height	mm	
	Triple swivel overhang	mm	
	Outboard upward	deg	
	Inboard backward	deg	
	riser	deg	
	Inboard downward	deg	
	Outboard put back	deg	
Weight	Empty	kg	
	Operating	kg	
	Test	kg	
ARM CONNECTIONS	Jetty connection at riser base	Size/Rating/Face	
	Ship's connection at outboard end	Size/Rating/Face	
	Drain connection at riser base	Size/Rating/Face	
	Drain connection at outboard end	Size/Rating/Face	
	N2 Purging connection at riser base	Size/Rating/Face	
	Vacuum breaker at apex:	Size/Rating/Face	


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A7. Material

GENERAL	Inboard arm/ outboard arm				
	All Flanges; fittings; fasteners;				
	Swivel joint including ball, ball races				
	Pantograph cables				
	Seal of swivel joint				
	O ring				
	Base riser and jacket				
	Hydraulic tube				
	Platform				
MAIN PRODUCT LINE	Pipes				
	Elbows				
	Reducers				
	Flanges				
	Forging				
	Fasteners	Bolt			
		Nut			
		Washer M			
	Swivel joints (≥ 6" on main product line)	Forging			
		Balls			
		Snap in races			
		Overlaid Packing Faces			
	Branches	Pipes			
		Elbows			
		Reducers			
		Forging			
		Flanges			
		Valves	Body		
			Ball		
			Gasket		
	Check Valves	Body			
		Plug			
	Coupler	Body			
		Tightening screw			
		Clamps			
	Disc Valve	Body			
		Disc			
Stem					
Seat					

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A7. Material (Continue)			
MAIN STRUCTURAL MATERIAL	Pipes	ASTM A 106 Gr. B or API 5L Gr. B or St 37.0 Standard DIN 2448/1629 or St 37.0 Standard DIN 2458/1626	
	Forging	ASTM A 105	
	Plates, Sheets	S275JR (NF EN 10 025-2) / E 28-2	
	Structural Shapes	S235JR (NF EN 10 025-2)	
	Cables	Non spinning wire rope	
	Fasteners (NF E 27 005)	Screw	Class 8.8 (NF E 29 043AM) (EN ISO 898-1) Class 8 (NF E 29 043AM)
		Nut	(EN ISO 898-1)
		Threaded Rod	ASTM A 193 Gr. B7
		Washer W	Carbon Steel - DIN 127
		Washer M	Carbon Steel NF E 25 513 Grade C (EN ISO 7091)
	Swivel joints	Forging	ASTM A 105
Balls		100 Cr6 (NF A 35 565)	
Snap in Race		AISI 301	
OTHER PARTS	Forging	ASTM A 105	
	Plates, Sheets	S275JR (NF EN 10 025-2) / E 28-2	
	Structural Shapes	S235JR (NF EN 10 025-2)	
	Fasteners	Screw	Class 8.8 (NF E 29 043AM) (EN ISO 898-1) Class 8 (NF E 29 043AM)
		Nut	(EN ISO 898-1)
		Threaded Rod	Class 8.8 (NF E 29 043AM) (EN ISO 898-1)
		Washer M	Carbon Steel NF E 25 513 Grade C (EN ISO 7091)
	Counterweights	Grey iron or S275JR (NF EN 10 025-2)	
Hydraulic Piping	Stainless Steel AISI 316L		
Hydraulic Fittings	Stainless Steel AISI 316		

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A8. Item Be Supplied

Loading Arm Main Parts:

- | | |
|---|--|
| <input type="checkbox"/> Base Plate (Template) | <input type="checkbox"/> Double Ball Valve including ERC |
| <input type="checkbox"/> Standpost | <input type="checkbox"/> Slew Lock |
| <input type="checkbox"/> Swivel Joints | <input type="checkbox"/> Rigid Link |
| <input type="checkbox"/> Primary Counterweights | <input type="checkbox"/> Inboard Arms |
| <input type="checkbox"/> Secondary Counterweights | <input type="checkbox"/> Outboard Arms |
| <input type="checkbox"/> Triple Swivel Joints | <input type="checkbox"/> Apex Swivel Joints |
| <input type="checkbox"/> Support Jack | |

Accessories:

- | | |
|---|--|
| <input type="checkbox"/> Vacuum Breaker | <input type="checkbox"/> Earthing Lug At Riser Base Plate |
| <input type="checkbox"/> Nitrogen Purge line | <input type="checkbox"/> Interconnection Cables |
| <input type="checkbox"/> Drainage Connections | <input type="checkbox"/> Hand Pump for Electric Failure |
| <input type="checkbox"/> Emergency Release System (ERS) hydraulic | <input type="checkbox"/> Freewheel/Control Valves |
| <input type="checkbox"/> Envelope Warning System | <input type="checkbox"/> Foundation Bolts & Nuts |
| <input type="checkbox"/> Hydraulic Quick Release Coupler | <input type="checkbox"/> Quick connection & disconnection Coupling |
| <input type="checkbox"/> Product Pipe | <input type="checkbox"/> Oil Pump c/w motor |
| <input type="checkbox"/> Insulating Flange | <input type="checkbox"/> Pendant Control Box |
| <input type="checkbox"/> Hydraulic Unit | <input type="checkbox"/> Audible - Visual Alarm |
| <input type="checkbox"/> Valve Rack Including Control Valves | <input type="checkbox"/> Remote Control Box |
| <input type="checkbox"/> Vapor Return Line | |
| <input type="checkbox"/> Locking Devices | |
| <input type="checkbox"/> Ladders & Platform for Access to Trunnion & Apex Swivels | |
| <input type="checkbox"/> Static Bonding Cables Across | |
| <input type="checkbox"/> Swivel Joints | |

Hydraulic Unit:

- | | |
|--|--|
| <input type="checkbox"/> Painted Stainless Steel Cabinet | <input type="checkbox"/> Pressure Control Valves |
| <input type="checkbox"/> Hydraulic Oil Reservoir | <input type="checkbox"/> Solenoid Valves |
| <input type="checkbox"/> Electric Motor Driven Hydraulic Pump | <input type="checkbox"/> Selector Valve Unit for Each Arm |
| <input type="checkbox"/> Reservoir Level Gauge | <input type="checkbox"/> Interconnecting Piping (SS) between HPU & Arm |
| <input type="checkbox"/> Full Flow Oil Filter | <input type="checkbox"/> Interconnection Cabling Between LCP & Arm |
| <input type="checkbox"/> Differential Pressure Indicator on Filter | <input type="checkbox"/> Junction Boxes For Instrument and electric power connection |
| <input type="checkbox"/> Pressure Gauge | <input type="checkbox"/> Control Valves for Arm Movement & ERC Operation |
| <input type="checkbox"/> Hydraulic accumulator for back-up Operation of the Emergency Release Coupling | <input type="checkbox"/> Accumulator |
| <input type="checkbox"/> Pressure Relief Valves for each Arm Mode | |