

**PAKISTAN AERONAUTICAL COMPLEX, KAMRA
MIRAGE REBUILD FACTORY**

TENDER NOTICE : OPEN TENDER

Tender reference	:	MRF/Log/26-27/OT-03
Tender No	:	OT-03
Publishing date	:	16 September, 2026
Last date of submission of bids	:	01 October, 2026 (1000 Hrs)
Opening date & Time	:	01 October, 2026 (1100 Hrs)

1. Sealed tenders for purchase / repair of items as per enclosed list are invited from sales tax registered Suppliers who are on Active Taxpayers List (ATL) of FBR.

Pattern of Quotations

2. The quotation shall comprise a single package containing 02 separate envelopes. Tender reference along with due date of opening and Category Number must be clearly marked. Each envelope shall contain separately, the Financial proposal and the Technical proposal respectively. Each bid (financial / technical) will be on separate leaf against single line item, envelope cover must be marked with "Item name". **Quotations with multiple line items on single page will be dropped. Quotations should be on original letter head (color printed).** The quotations shall be addressed to Managing Director MRF, PAC Kamra as per terms given below:-

(a) **Technical Offer:** It should be without prices and contain all relevant essential specifications along with literature / brochures. Tender number, date of submission, date of opening and word (Technical offer) should be clearly marked. The tendered Part No should be mentioned against quoted item / offer. Any details of equivalent / variables being quoted should be clearly mentioned against Part No being tendered. **NSN / OEM Part No** should be mentioned on both technical and commercial quotations. All quoted products must have traceable local / foreign OEM. **Country / Place of Manufacture / OEM** of stores is to be provided along with Technical / Commercial offer. **Certificate of Conformance** (where applicable), **Technical Data Sheet (TDS)** and **Material Safety Data Sheet (MSDS)** along with any other relevant literature by OEM are must for all Aviation Items, Chemicals, Material and Equipment. All precision measuring equipment must be quoted with provisioning of fresh **Calibration Certificate**. Spectrometric analysis report against raw material / hardware items may be required to establish conformity of delivered product. All Chemicals, lubricants and any item of shelf life (**remaining life not less than 75 % at time of delivery**) range must be quoted with provisioning of **MSDS** along with fresh **Laboratory Test Reports** against corresponding LOT No, Batch No, Date of Production, Date of Expiry of delivered stores. **Part Catalogues, IPBs (Illustrated Part Breakdown), User Guides, Operating / Maintenance Manuals, Brochures, Prices** which ever available / applicable would be provided free of cost along with delivered stores. **Unit of issue** must be same as mentioned in tender notice. Confirmation to this effect is to be furnished by written certificate along with quotation. License keys, activation / access passwords and source codes are to be provided along with all software whether purchased individually or as a part of any system/equipment or machinery.

(b) **Financial Offer:** It should indicate price of quoted item (**to be delivered at MRF, Kamra premises with all liabilities on Suppliers**) and confirmation to the terms and condition of MRF tender inquiry. The words "**Financial Offer**" should be clearly marked. The Quoted prices are to be exclusive of GST levied by the Government and these should be in accordance with the current Local market prices. GST must be mentioned separately. All other charges must be incorporated in offered price. Rates must be mentioned in both "**words**" and "**figures**". Following documents must accompany financial offer:-

- (i) Proof of being on **active taxpayers list**
- (ii) Sales tax registration certificate

- (iii) NTN certificate
(iv) Professional Tax certificate of the province where the contract is being concluded
as per MAG letter No 54/AT/S/1687-Vol-XXVII/P-29 dated 22 April, 2013 and Taxation department Punjab letter No SO (TAX) 1-33/77 (P-IV) date 28 August, 2003.
(v) Any specific SRO / Tax exemptions if applicable must be notified along with commercial offer.

(c) **Bid Money / Earnest Money:** The **unregistered firms with PACB** (Pakistan Aeronautical Complex Board, Kamra) will have to furnish **earnest money @ 5%** of the quoted value through **Bank Draft / CDR** in favor of **Public Fund Account MRF PAC, Kamra**. The earnest money instrument should indicate Tender reference and firm/company name. In case where the exact Quantity has not been mentioned the earnest money should be calculated against **MOQ / market available standard OEM packaging**. The exact bid money in this scenario will have to be furnished within **01 week** of intimation of being technically accepted, lowest financial bidder. The confirm purchase order will be furnished upon receipt of earnest money. Earnest money of bidders backing out of submitted quote or failing to provide in time delivery will be forfeited along with initiation of disciplinary actions.

Quantity

3. Quantity can be increased / decreased at the time of order as per MRF requirement without change of financial quotations. Bids once submitted will not be allowed to be changed and will be binding on suppliers for delivery of stores if purchase order is furnished, however, clarifications may be sought.

Offer requirement / validity

4. The quotation should be valid if it contains under mentioned information.
- (a) Quote Validity should be minimum **90 days** and extendable on request. Quotations with less validity will be rejected.
 - (b) EDD must be available on Commercial Quote. Quotation will not be accepted without delivery period.
 - (c) Picture and TDS must be available with technical quote.
 - (d) Separate quote for every single line item.
 - (e) Mentioning of date on commercial / technical quotes is mandatory.
 - (f) Terms & Conditions should be mentioned on commercial / technical quotes.

Delivery Period

5. **Items are to be delivered at MRF, PAC KAMRA premises with all liabilities on Suppliers.** Stores are required within minimum possible delivery period. Offer with minimum delivery period are likely to be preferred. However, the delivery period should be factual as no subsequent extension will be granted except under extreme / un-avoidable circumstances. **Delivery period will invariably start from furnishing of written (provisional / firm) purchase order whichever is earlier.** Delivered stores must be in **standard packing** (free of any separate cost). Delivery of items shall be strictly made as per timeline mentioned in purchase order. In case of failure, MRF reserves the right to cancel any PO.

6. Acceptance of Stores / General Terms & Conditions

- (a) **Certificate of Conformance, TDS and MSDS** by OEM is must for all aviation items, Materials and Equipment.
- (b) All precision measuring equipment must accompany fresh **Calibration Certificate** either from **OEM or any certified credible facility**.
- (c) All Chemicals, lubricants and any item of shelf-life (**remaining life not less than 75 % at time of delivery**) range must accompany **MSDS** along with fresh **laboratory test reports** against

corresponding LOT number, Batch number, date of production, date of expiry of delivered stores.

- (d) In case of life items, the remaining shelf life must be at least **75 %** at the time of delivery.
- (e) Stores will be accepted after inspection by concerned user / Quality Control **Directorate as per QMS of MRF.**
- (f) Supplier will be made responsible for **warranty / guarantee** of newly purchased items **at least one year or maximum possible.** In case of rejection of item on receipt or any defect / anomaly found within warranty period whether before use or while in use, the supplier will provide free of cost repair / replacement (which applicable) at MRF Kamra premises bearing all liabilities.
- (g) All repair works / services will **INVARIABLY** be under at least **06 months warranty**, unless contracted otherwise and depends upon case-to-case basis.
- (h) **Part Catalogues, IPBs (Illustrated Part Breakdown), User Guides, Operating / Maintenance Manuals, Brochures, Prices** which ever available / applicable would invariably be provided **free of cost** along with delivered stores.
- (i) Items should be current year's production.
- (k) Supplier will retain record of all products delivered to MRF kamra, for at least 03 years.
- (l) MRF reserves the right to visit / inspect any premises of supply chain against required / offered products.
- (m) The supplier will be responsible for in time payment of all applicable taxes and duties to relevant agencies as per in vogue GOP regulations. The supplier must be able to furnish / produce such record as and when demanded by MRF.
- (n) Any item being tendered if obsolete / discontinued by OEM may please be communicated along with said certification by OEM. Suitable replacements / substitutes / interchangeable may also be communicated along with complete technical / operational details.
- (p) All quotations/ bids, correspondence and clarifications / queries must be on company letter head duly signed by authorized signatory authority. Active contact / correspondence details (phone no. mobile no. email & postal address must be mentioned).
- (q) All quotations, bids, clarifications, queries, correspondence and product will be kept strictly confidential.

Release of Payment

7. Payment will be released by Dte of Budget and Accounts, MRF PAC, Kamra on submission of Sales Tax invoice along with copies of GST registration, NTN certificate and Professional Tax certificate. Sales Tax Return against previous transactions (if any) during current financial year and copy of relevant SRO (if applicable) will also be required. All payments are to be received after successful acceptance of delivered stores by user and upon furnishing of requisite documentation. After receipt of payment, supplier is to furnish monthly sales tax return declaration along with Annexure "C" (DOMESTIC SALES INVOICE DETAIL) duly depicting invoice number against which payment has been received from MRF, Kamra. Specified amount of GST and Income tax will be withheld/ deducted at source as per GOP instructions in vogue. Any exemption in this regard will only be entertained upon furnishing of FBR issued EXEMPTION certificate in name of Firm / Company against specified item.

Terms and Conditions

8. The terms and conditions mentioned in this document will be integral part of any purchase order furnished against this tender, whether or not mentioned again.

Clarifications of Queries

9. Queries if any may be cleared by contacting **051-90994414, 90994727.**

Rejection

10. Offers are liable to be rejected if:
- (a) There is a deviation from any instruction.
 - (b) Offers are found conditional or incomplete in any respect.
 - (c) Overwriting / erasing in prices.
 - (d) Firm **BLACKLISTED / UNDER EMBARGO / DELISTED** by any **Government Organization**.
 - (e) Any terms and conditions not in conformity with tendered terms and conditions.

Delivery of Tender

11. Each quotation (financial / technical) shall be on separate leaf against single line item. Both the envelopes of **Technical and Commercial** offers should be enclosed in one cover properly sealed, **envelope cover must be marked with "Item name"** and bear the following address of Indigenous Provisioning office, MRF with tender Inquiry number and opening date.

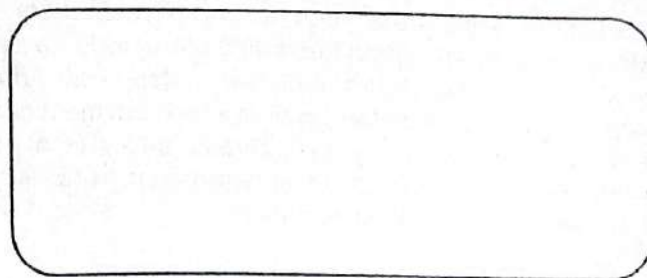
Officer In charge Indigenous Provisioning
Mirage Rebuild Factory,
Pakistan Aeronautical Complex, Kamra
District Attock

Opening of Tender

12. The quotations must be in original and are to reach at this factory by **1000 Hrs** on **01 October, 2026**. All quotations are to be dropped in the tender box placed at the MRF Guard Room. No quotation will be accepted in photocopy, through Fax and after due date and time. Tender will be opened on **same day at 1100 Hrs** in the presence of witnessing officers and available representatives of the firms in Officer In charge Indigenous Provisioning. MRF reserve the right to cancel or reject any or all bids / proposals against complete tender or any part thereof, at any time without any liability. In case of official holiday, the Tender will be opened on next working day.

13. List of items can also be downloaded from PPRA website www.ppra.org.pk and as well as PACB website www.pac.org.pk free of cost or can be collected from Dte of Log (Local Purchase Section) MRF PAC Kamra Distt Attock from **16 September, 2026** during working hours (except holidays).

Yours Sincerely,



MRF QUALITY SYSTEM REQUIREMENTS

Following are the requirements to be satisfied by the Supplier (External Provider) / Sub-Contractor (Local Vendor) of MRF:-

1. The processes, products, and services to be provided including the identification of relevant technical data (e.g., specifications, drawings, process requirements, work instructions).
2. The approval of products and services, methods, processes, equipment, and the release of products and services.
3. Provide inspection and testing criteria for acceptance by MRF.
4. Obtain approval from MRF of changes in product / process.
5. Provide Objective evidence of the quality of product.
6. To ensure product conformance to specified requirements.
7. To provide manufacturing date and Lot number.
8. To provide shelf life and expiry date as applicable
9. Competence, including any required qualification of persons.
10. The external providers' interactions with the organization.
11. Control and monitoring of the external providers' performance to be applied by the organization.
12. Verification or validation activities that the organization, or its customer, intends to perform at the external providers' premises.
13. Supplier (External providers) apply appropriate controls to their direct and sub-tier Suppliers (external providers), to ensure that requirements are met.
14. Design and development control.
15. Special requirements, critical items, or key characteristics.
16. Test, inspection, and verification (including production process verification).
17. The use of statistical techniques for product acceptance and related instructions for acceptance by the organization.
18. To provide Material / Metallurgical test reports along with raw material for traceability through Lot / Batch No. External Provider will also provide date of manufacture of provided Lot / Batch No of raw material.
19. The need to:
 - (a) Implement a Quality Management System.
 - (b) Use customer-designated or approved external providers, including process sources (e.g., special processes).
 - (c) Notify the organization of nonconforming processes, products, or services and obtain approval for their disposition.
 - (d) Prevent the use of counterfeit parts.
 - (e) Notify the organization of changes to processes, products, or services, including changes of their external providers or location of manufacture, and obtain the organization's approval.
 - (f) Flow down to external providers applicable requirements including customer requirements.
 - (g) Provide test specimens for design approval, inspection/verification, investigation, or auditing.
 - (h) Retain records (documented information), including retention periods and disposition requirements.
20. Ensuring that persons are aware of:
 - (a) Their contribution to product or service conformity.
 - (b) Their contribution to product safety.
 - (c) The importance of ethical behavior.

MRF/Log/2026-27/OT-03 Date of Publishing 16 September, 2026 Last Date of Bids Submission 01 October, 2026

S No	Part No	Noun	U/I	Qty	Shop	Remarks / Specifications
1	MC/234	Dry Seed Blasting Machine With Accy	Ea	1	Blostring Bay	As per attached list
2	EPOS-1	Electropneum Atic Positioner	Ea	1	Heat Treatment Shop	As per user sample
3	PR1425B2	Sealent	Kit	As Req	Heat Treatment Shop	Required in kit or integral tank, As per user sample
4	ST8-90	Test Probe (DIA 7.9 mm)	Ea	1	NDI Shop	As per attached list & As per sample
5	ST10-90	Test Probe (DIA 9.9 mm)	Ea	1	NDI Shop	As per attached list & As per sample
6	2-830-01-3011	LF Probe	Ea	1	Quality Control (A/C)	As per attached list & As per sample
7	5810PK1910001	Walki Talki Set Handheld	Ea	6	GC Sqn	As per attached list
8	MOD-DFH-4848	Vapour Blasting Dry Honing Machine MOD DFH 4848 Along With Accy	Ea	1	Blostring Bay	As per attached list
9	6796889	Fixture	Ea	1	Turbine Bay T-56	As per attached list
10	6796728	Support Safety Coup Dis Assy	Ea	1	RGB T-56	Part No: 6796728 Noun: Support Safety Coup Dis Assy
11	6796544	Drift Gen Drive Shaft FRT BRG Outer Race	Ea	1	RGB T-56	As per user sample
12	6897430	Puller Seal Starter Drive Shaft	Ea	1	RGB T-56	As per user sample
13	A11513374	Pressure Valve (132KW/10KW)	Ea	1	Aux Services Shop	As per user sample
14	ZPNA5025-245BN135-02-2	Centrifugal Electro-Pump	Ea	1	Atar Engine Test Bed	Medium: JP-8 Fuel & As per attached list
15	A956A001A	Latch	Ea	As Req	AW-139, RMC	
16	AW006FB01S02W	Fastener	Ea			
17	3G5320L00152	Fwd Conductive Rubber	Ea			

18	097-908-0	Nose Tube	Ea	8	AW-139, RMC	Part No: 097-908-0 Noun: Nose Tube
19	P-678A	Rtv3145 (Grey Compound) Non Polymerized Silicone Elaster	TU	15	Casing Assy P-5	RTV 3145 Grey Compound Non Polymerized Silicone Elaster
20	RSP-951	Test Rig Machine	EA	1	Fuel Reg Shop	As per attached list
21	250SG1235	Gasket	EA	3	AW-139, RMC	Part No: 250SG1235 Noun: Gasket
22	N/A	CCTV Cameras Along with Accessories and Installation	Ea	As per attached list	PPC (A)	As per attached list
23	DVPlus	Viscometer	Ea	01	QC (E)	Part No: DVPlus Noun: Viscometer
24	N/A	Light Mortar 60 mm	Ea	03	Security Wing	As per attached list
25	N/A	Long Range Rotatable Search Light	Ea	03		As per attached list
26	N/A	PTZ Camera 8MP Without Installation	Ea	06		As per attached list
27	N/A	Fixed Camera 8MP	Ea	30		As per attached list
28	PROX-25	RFID Card	Ea	180	Security Wing	Part No: PROX-25 Noun: RFID Card
29	OSECO-FAS-DN50	Rupture Disc	Ea	As Req	Test Rig Shop	Part No: OSECO-FAS-DN50 Noun: Rupture Disc
30	V-622	Sealing Compound	Kt		Rubber Application Shop	Part No: V-622 Noun: Sealing Compound
31	SBR227(22X20)	Mandrel Wheel GN50	Ea	2500	Metal Shop R&F Wing	Part No: SBR227 Noun: Rupture Disc
32	100549	Gasket	Ea	01	R&D Bay	Part No: 100549 Noun: Gasket
33	100953	Gasket	Ea	01	R&D Bay	Part No: 100953 Noun: Gasket

S No 01 Specifications of Dry Seed Blasting Machine With Accy

SCOPE OF WORK

1. Repair of reclaimer assembly with carbide coated sheet or equivalent.
2. Cyclone assembly needs to be replaced with new one;
3. Repair of dust collector.
4. Door actuator needs to be repaired.
5. Replacement of Filter Cartridge.
6. 01 Year warranty is required.

S No 04 Specifications of Test Probe (DIA 7.9 mm)

⇒ Stainless steel and Plastic / OEM (ETHER NDE)
OR
Flexible type Rotary probe (dia 7.9mm) (OLYMPUS)
(As per sample)
Compatibility to Tester required item is specialized

S No 05 Specifications of Test Probe (DIA 9.9 mm)

⇒ Stainless steel and Plastic / OEM (ETHER NDE)
OR
Flexible type Rotary probe (dia 9.9mm) (OLYMPUS)
(As per sample)
Compatibility to Tester required item is specialized

S No 06 Specifications of LF Probe

⇒ Stainless steel with Plastic handle / OEM (ETHER NDE)
OR
Low Frequency Probe (50KHZ TO 500KHZ) (OLYMPUS)
(As per sample)
Compatibility to Tester required item is specialized

S No 09 Specifications of Fixture

EXPORT CONTROLLED

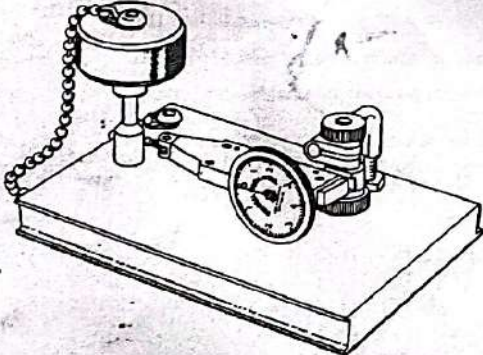
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TRADE MARK

T56/501D SERIES

ILLUSTRATED TOOL AND EQUIPMENT MANUAL



PN6796889

1. TOOL NAME / DESCRIPTION:
Fixture - Checking, Rod End Internal Clearance

2. CURRENT TOOL STANDARD:
6796889

3. FUNCTION:
Checks internal clearance or power section rod end assemblies.

4. USAGE:
TBD

5. WEIGHT:
TBD

(AMAD ALI KHALID)
Squadron Leader
O /c T56 Production
MRF PAC Kamra

6796889

Page 1
Jan.15/08

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S No 14 Specifications of Centrifugal Electro-Pump

S. No	Fuel Pump Type	Part No	Flow Rate	Motor Capacity
1.	Centrifugal Electro-Pump.	ZPNA5025-245BN135-02-2	19000 Ltr/Hr under 05 bar pressure	15 KW (220-380 Volts) 3-phase

S No 07 Specifications of Walki Talki Set Handheld

SPECIFICATION OF SECURITY EQUIPMENT

1. Walkie Talkie Set

Model	PD 788 G
Type	VHF Versatile digital portable two way radio with Built-in encryption
Frequency Range	136-174 MHz
Power	1W 5W
Channel Capacity	1624 Channels
Make	Hytera / HYT
Origin	China
Accessories	Li-ION Battery 2000 MAH
	Power adaptor
	MCU Rapid rate charger
	Belt clip

2. BOMB CONTAINER

Blasting Bomb Container can be used directly as a trash strategically placed where parcel bombs can be dropped and used directly as a containment system with clear pictograms.

- Height : 850-900mm
- Outside diameter : 400-500mm
- Thickness of container wall : 18-19mm
- Weight (Approx.) : 50-60 Kgs
- Blast protection : VOLT 42-50 at 480m/s
- Shelf life : 20-25 years
- Colour : Black / Orange

Note:- Equivalent / Better or latest specification available in the market

S No 08 Specifications of Vapour Blasting Dry Honing Machine MOD DFH 4848 Along With Accy

SCOPE OF WORK

1 Repair of Media reclaimer assembly with carbide coated sheet or equivalent.

2 Repair of Cyclone assembly with carbide coated sheet or equivalent.

3 Repair of Door and Face Screen

(i) The existing sliding door, of blasting machine shall be modified and converted into two door panels arrangement to open/close upon its fixed axis. The contractor shall provide suitable mechanical arrangement provide necessary hinges, rollers, guides, support locking arrangement stops and other hardware as required. Ensure proper alignment and secure locking of door during machine operation. Carryout all fabrication, welding fitting, grinding and finishing work as per given dimensions: -

Length 42 inch

Width 48 inch.

(ii) The existing face shield screen of the blasting machine, shall be modified to incorporate a replaceable / removeable screen mechanism. The arrangement shall be designed in such a way that the worn-out damage shielding screen can easily be removed or replaced without dismantling the major components of the blasting machine. Dimensions are given below: -

Length 11 inch

Width 19 inch

Contractor shall design and fabricate a suitable removeable / replaceable arrangement for shielding screen. Ensure that the arrangement maintain the security during blasting operations. Provide proper sealing and fixing around the screen to minimize the escape of blasting media.

4 Install rubber mat inside the machine cabinet

5 Replacement of filter cartridges.

6. 06-month warranty of repair work is required.

S No 24 Specifications of Light Mortar 60 mm

SPECIFICATION OF MORTAR 60 MM WITH ALL ACCESSORIES

Qty-03

S No	Specification	Detail
Characteristics		
1	Bore	60 mm smooth
2	Length of Barrel	623 mm with breech
3	Elevation	45 to 80 degrees
4	Range	50 to 2000 meters
5	Rate of Fire	8 rounds per minutes
6	Type of Firing mechanism	Manual
Weight		
1	Gross	14.8 Kg
2	High Explosive Round	1.3 Kg
Ammunition		
1	High Explosive	
2	Smoke	
3	Illuminating	
Warranty		
1	Warranty minimum 02 years.	
2	Spare & maintenance support at least for 10 years.	

OR

Equivalent / Latest specification available in the market at procurement

S No 25 Specifications of Long Range Rotatable Search Light

SPECIFICATION OF LONG-RANGE ROTATABLE SEARCH LIGHT

Qty-03

S No	Specification	Detail
1	Operation	Manual
2	Mounting Location	Fixed installation on security / watch towers
3	Horizontal Rotation	360° manual rotation
4	Vertical Tilt	±30° (up & down) / higher
5	Control Method	Manual handle / crank / lever
6	Locking System	Must lock
7	Light Source	High power LED minimum 500w
8	Effective Illumination Range	Minimum 1000 meters
9	Light Color	Cool White
10	Weather Protection	Minimum IP66 / IP67
11	Operating Temperature	-10 °C to +55 °C minimum
12	Accessories	Mounting hardware
		Manual operating handle
		Weatherproof power cable (as required)
		Operation manual
		Installation on required location
13	Warranty	OEM standard
14	Housing Material	Heavy duty aluminum alloy / steel

OR

Equivalent / Latest specification available in the market at procurement

S No 20 Specifications of Test Rig Machine

D	SCOPE OF WORK
	UNIOP (rpm indicator + controller not working properly)

S No 22 Specifications of CCTV Cameras Along with Accessories and Installation

REQUIREMENT OF CCTV CAMERAS ALONG WITH ACCESSORIES AND INSTALLATION AT MRF

S No	Part No	Noun	QTY
1	DS-2CD1063G2-LIU(F)	FIXED IP CAMERA 6MP	43
2	NVR DS-7632NXI-K2	NVR 32 CHANNEL	02
3	DS-D5043UC	LED DISPLAY 43 INCH	04
4	CORE-I7-7TH-GEN	COMPUTER (I7)	02
5	211BM/PAF-009	8 TB SATA SKY HAWK HDD	04
6	DS-3E0510P-E	8 PORT POE	02
7	DS-3E0318P-E	16 PORT POE	01
8	SRV2KI	UPS 2 KVA	02
9	4030PK0001050	COPPER CABLE CAT-6 UTP	06 Roll
10	6015PK3340001	FIBER OPTIC CABLE 6 CORE	04 Roll
11	ODF 4 Port	ODF 4 PORT WITH PIG TAILS & ACCESSORIES	04
12	2 CORE 7/0.29	POWER CABLE 7/28	04 Roll
13	TP-Link 28 Port Gigabit	TP-LINK 28 PORT GIGA BIT	01
14	AG12V100F	MAINTENANCE FREE BATTERIES 12 V	04
15	12/AMF-05	12U RACK	02
16	2U/AMF-RM00348	2U RACK	12
17	2U/AMF-RM00348	1U RACK	02
18	5940PK300003	CABLE TIE, SCREW, POWER EXTENSION, SOCKET & ACCESSORIES	-

S No 27 Specifications of Fixed Camera 8MP

Dated: -

High-Quality Video Analytics Base IR WDR Bullet EPOE Network Camera with 80/Higer Meter IR.
Specifications: 8/Higer Megapixel progressive scan CMOS
H.265+/H.265/H.264 Compression
60fps@4K (3840×2160), 25/30fps@3MP (2304×1296) Day/Night (ICR), 0 Lux, 3DNR, AWB, AGC,
Defog, BLC, True WDR (120DB) Supported.
Minimum Illumination 0.03Lux/F1.4 Color
Intelligent Video Analytics: Tripwire/Line Crossing, Intrusion, Object Abandoned/Missing, Face
Detection, human/vehicle classification.
Motorized varifocal lens 2.8-12mm/higer, 5x zoom lens
2/1 Alarm in/out, 1/1 audio in/out
IR LEDs Length 80/higer Meters, 0 Lux Performance, Smart IR Supported
Micro SD memory up to 256 Gb, IP67, IK10, PoE
ONVIF Profile S&G, API supported
Certifications: CE (EN 60950:2000), UL: 60950-1 FCC: Part 15 Subpart B
Warranty: As per OEM standards

S No 26 Specifications of PTZ Camera 8MP Without Installation

1/1.8" progressive scan CMOS 8MP/Higher
Powerful 48x optical zoom
Panoramic multi sensor lens ≥ 180 FOV
Resolution 3840X2160 (4K)
IR distance up to 450m
Frame rate 25/30/60 fps
Video compression H265/H264/H265+
120dB wide dynamic range
Auto Tracking Deep-learning-based auto tracking and perimeter protection
Support metadata's Plus, Smart wiper, PFA technology,
IP-67 for Harsh environment Protection
Interoperability ONVIF and PSIA
Max. Aperture F1.4~F4.8
Minimum Illumination Color: 0.002Lux@F1.4.
Pan range Pan: 0° to 360° endless and Tilt range- 30° to 90°, auto flip 180°
presets ≥ 300 , Patrol/Pattern Scan supported
Electronic image Stabilization (EIS) and Optical Defog Supported
Intelligent video system supported Tripwire, Intrusion and object Abandoned/Missing advanced
Intelligent functions, face detection, heat map and auto tracking supported
Predictive focus Algorithm must be supported
Must have $\pm 25\%$ input voltage tolerance with 8 KVA lightning protection
Operating conditions -30°~ 60°C
Support Hi-PoE ONVIF profile S&G, API supported, Micro SD card supported
Warranty: As per OEM standards

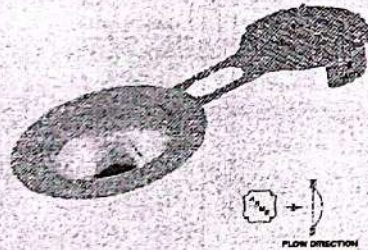


DATASHEET 7
TECHNICAL SPECIFICATIONS

FAS™

FORWARD ACTING SCORED

The FAS features the lowest K_n in the industry for a forward acting disc. Available in the Oseco Safety Cartridge™.



The FAS™ rupture disc is designed and manufactured for high-performance and demanding rupture disc applications. The disc is cross-scored after the forming of its high crown. This process yields a high-performance disc to withstand high operating pressures within the most difficult applications.

The FAS offers a smooth non-scored surface on the process side. This limits product accumulation on the disc and reduces the risk of polymerization and crystallization of media on the disc surface.

The low K_n value and high combination capacity factor make the FAS an excellent choice for isolation of safety relief valves.

Size	1" - 24"
Burst Pressure	40-5,000 psig
K_n Value	K_{n0} 0.223 K_{n1} 0.19
Operating Ratio	90%
Performance Tolerance	$\pm$ 5%
Manufacturing Range	0%

Let us help you with all
your pressure relief questions.

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REQUEST A QUOTE FOR
THE FAS



TECHNICAL SPECIFICATIONS



Size range	1" - 24" (25-600mm)
Burst pressure range	40-5,000 psig (2.8-344.7 barg)
Temperature range	Up to 900°F (482°C)
Standard materials	316 Series Stainless Steel, Nickel, Inconel® 600, Monel®, Hastelloy® C
K_n Value	K_{n0} 0.223 K_{n1} 0.19
Max. Operating Ratio	90% of nominal burst pressure
Performance Tolerance	$\pm$ 5%
Manufacturing Range	0%
Fragmentation	Non-fragmenting design
Vacuum Service	Withstands full vacuum (14.7 psi) without separate vacuum support
Fluid compatibility	Gas service and liquid service
Torque requirements	See installation guide
Cycling or static service	Static service
Protective linings	PFA-grade Fluoropolymer liners available for atmospheric and/or process sides
Relief Valve Isolation	Suitable for safety relief valve isolation, especially at high pressures
Disc Surface Finish	Smooth surface on the process side to minimize product build-up
Design Standards	Designed to meet ASME Section XIII standards

Certifications

ASME UD
CRN
CE
CU/TR 032
China SELO

Related Products

Sensors	Holders
AMS	FRDI
SVT	FRDI - P
CMS	FRDH

One Piece Unit
Oseco Safety
Cartridge

S No 29 Specifications of Rupture Disc

Burst Pressure Ranges

FAS Min/Max Burst Pressure @ 72° F (psig) / 22° C (barg)



SIZE inches DN (mm)	MATERIAL	MIN PSIG (barg)	MAX PSIG (barg)	MIN PSIG (barg)	MAX PSIG (barg)
1	316 Stainless Steel	300 (20.7)	475 (32.7)	300 (20.7)	475 (32.7)
	Nickel	70 (4.8)	140 (9.7)	350 (24.1)	350 (24.1)
	Inconel	130 (9.0)	200 (13.8)	400 (27.6)	400 (27.6)
	Hastelloy C	250 (17.2)	270 (18.6)	350 (24.1)	350 (24.1)
1.5	316 Stainless Steel	30 (2.0)	160 (11.2)	350 (24.1)	400 (27.6)
	Nickel	50 (3.4)	100 (6.9)	250 (17.2)	250 (17.2)
	Inconel	80 (5.5)	170 (11.7)	300 (20.7)	300 (20.7)
	Hastelloy C	125 (8.6)	250 (17.2)	350 (24.1)	350 (24.1)
2	316 Stainless Steel	60 (4.1)	120 (8.3)	270 (18.6)	300 (20.7)
	Nickel	40 (2.8)	80 (5.5)	180 (12.4)	200 (13.8)
	Inconel	50 (3.4)	130 (9.0)	225 (15.5)	250 (17.2)
	Hastelloy C	100 (6.9)	200 (13.8)	300 (20.7)	350 (24.1)
3	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
4	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
6	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
8	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
10	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
12	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
14	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
16	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
18	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)
24	316 Stainless Steel	50 (3.4)	110 (7.6)	200 (13.8)	200 (13.8)
	Nickel	30 (2.1)	60 (4.1)	145 (10.0)	160 (11.2)
	Inconel	50 (3.4)	100 (6.9)	175 (12.4)	180 (12.4)
	Hastelloy C	80 (5.5)	160 (11.2)	250 (17.2)	300 (20.7)

Consult factory for minimum burst pressure when using a line
316 Stainless Steel Flare added on vent side

Consult Factory

Free Flow Area / Minimum Net Flow Area (MNFA)



NOMINAL BORE		MNFA	
inches	DN (mm)	Sq. inch	mm²
1	25	0.864	557
1.5	40	2.039	1,313
2	50	3.355	2,164
3	80	7.393	4,769
4	100	12.73	8,212
6	150	28.89	18,638
8	200	50.0	32,250
10	250	78.9	50,903
12	300	113.1	72,967
14	350	137.9	88,967
18	400	176.7	113,999
18	450	233.7	150,773
24	600	424.8	273,934

Burst Tolerance

1/2" (12.7 mm) to 1" (25.4 mm)	1/2" (12.7 mm) to 1" (25.4 mm)
1/2" (12.7 mm) to 1" (25.4 mm)	1/2" (12.7 mm) to 1" (25.4 mm)

K_r Value (Frictional Loss Factor)

K _r	PAS
K _r	0.223
K _r	0.19