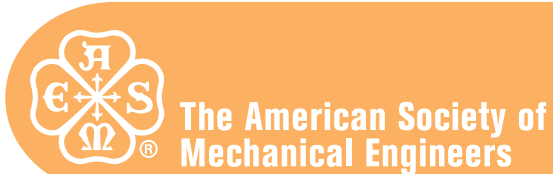


ASME PASE-2014
(Revision, Redesignation, and Consolidation of
ASME PALD-2009 and ASME ASP-2010)

Safety Standard for Portable Automotive Service Equipment

AN AMERICAN NATIONAL STANDARD



ASME PASE-2014
(Revision, Redesignation, and Consolidation of
ASME PALD-2009 and ASME ASP-2010)

Safety Standard for Portable Automotive Service Equipment

AN AMERICAN NATIONAL STANDARD



**The American Society of
Mechanical Engineers**

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: December 29, 2014

The next edition of this Standard is scheduled for publication in 2019. This Standard will become effective 1 year after the Date of Issuance.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the ASME Web site under the Committee Pages at <http://cstools.asme.org/>.

Errata to codes and standards may be posted on the ASME Web site under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The Committee Pages can be found at <http://cstools.asme.org/>. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting "Errata" in the "Publication Information" section.

ASME is the registered trademark of The American Society of Mechanical Engineers.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Standards Committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment that provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assumes any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations of this document issued in accordance with the established ASME procedures and policies, which precludes the issuance of interpretations by individuals.

No part of this document may be reproduced in any form,
in an electronic retrieval system or otherwise,
without the prior written permission of the publisher.

The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

Copyright © 2014 by
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
All rights reserved
Printed in U.S.A.

CONTENTS

Foreword	vi
Committee Roster	vii
Preface	viii
Part 1 Introduction	1
Part 2 General Requirements	3
Part 3 Attachments, Adapters, and Accessories	6
Part 4 Hydraulic Hand Jacks	8
Part 5 Transmission Jacks	12
Part 6 Engine Stands	17
Part 7 Vehicle Support Stands	20
Part 8 Emergency Tire-Changing Jacks	27
Part 9 Mobile Lifts	33
Part 10 Service Jacks	35
Part 11 Wheel Dollies	41
Part 12 Shop Cranes	44
Part 13 Auxiliary Stands	47
Part 14 Automotive Ramps	49
Part 15 High-Reach Supplementary Stands	53
Part 16 Forklift Jacks	56
Part 17 Vehicle Transport Lifts	58
Part 18 Vehicle-Moving Dollies	62
Part 19 Wheel Lift Jacks	65
Part 20 Shop Presses	69
Part 21 Oil Filter Crushers	72
Part 22 Strut Spring Compressors	75

Part 23	Oil and Antifreeze Handlers	78
Part 24	Portable Hydraulic Power Kits	81
Figures		
4-1.3-1	Typical Single-Stage Hydraulic Hand Jack	9
4-1.3-2	Typical Wheeled Pneumatic/Hydraulic Hand Jack	10
4-1.3-3	Typical Pneumatic/Hydraulic Hand Jack	10
4-1.3-4	Typical Multiple-Stage Hydraulic Hand Jack	11
5-1.3-1	Typical Hydraulic Transmission Jack	13
5-1.3-2	Typical Pneumatic/Hydraulic Transmission Jacks	14
6-1.3-1	Typical Single-Post Engine Stands	18
6-1.3-2	Typical Twin-Post Engine Stand	18
7-1.3-1	Typical Vehicle Support Stands	21
7-1.3-2	Horizontal Dimensions and Vertical Heights for Stability Considerations	22
7-1.3-3	Typical High-Reach Fixed Stand, Saw Horse Type	23
7-1.3-4	Typical High-Reach Fixed Stand, Tripod Type	24
7-4.1.1-1	Application of Load for Off-Center Load Test	26
7-4.1.1-2	Application of Load for Centered Load Test	26
8-1.3-1	Typical Screw Jack	28
8-1.3-2	Typical Bumper Jack	28
8-1.3-3	Typical Scissors Jack	29
8-1.3-4	Typical Frame Jack	29
8-4.1.4-1	Stability Test — Compound Slope (Downgrade)	31
8-4.1.4-2	Stability Test — Compound Slope (Upgrade)	31
9-1.3-1	Typical Upright-Type Mobile Lift	34
9-1.3-2	Typical Scissors-Type Mobile Lift	34
10-1.3-1	Typical Hydraulic Service Jacks	36
10-1.3-2	Typical Pneumatic/Hydraulic Service Jacks	37
10-2.7-1	Lift Arm Parallel	38
10-2.7-2	Saddle Periphery Limits	38
10-4.1.4-1	Saddle Periphery Test	39
11-1.3-1	Typical Wheel Dollies	42
12-1.3-1	Typical Shop Cranes	45
13-1.3-1	Typical Auxiliary Stands	48
13-4.1.1-1	Application of Load for Proof Load Test	48
14-1.3-1	Typical Automotive Ramps	50
14-4.1.1-1	Typical Test Area for Off-Center Load Test	51
14-4.1.2-1	Typical Test Area for Proof Load Test	52
15-1.3-1	Typical High-Reach Supplementary Stand	53
15-2.6-1	Stability	54
15-4.1.1-1	Proof Load Test	55
16-1.3-1	Typical Forklift Jack	57
17-1.3-1	Typical Vehicle Transport Lifts	59
18-1.3-1	Typical Vehicle-Moving Dollies	63
19-1.3-1	Typical Wheel Lift Jack	66
19-4.1-1	Example Measurement Location for Dimension X	68
20-1.3-1	Shop Press, Air or Hydraulic	70
20-1.3-2	Shop Press, Manual Hydraulic	70
20-1.3-3	Shop Press, Manual Hydraulic Bench	70
21-1.3-1	Oil Filter Crushers, Pneumatic	73
21-1.3-2	Oil Filter Crushers, Hydraulic	73
22-1.3-1	Fixed Strut Spring Compressor (Wall Mounted)	76
22-1.3-2	Portable Strut Spring Compressor (Stand Mounted)	76
22-1.3-3	Clamshell Strut Spring Compressor	76
22-1.3-4	Individual-Screw Strut Spring Compressor	76

23-1.3-1	Oil or Antifreeze Handlers, Pneumatic	79
24-1.3-1	Typical Portable Hydraulic Power Kit	82
24-1.3-2	Standard Kit Fit-Up	82
24-1.3-3	Standard Kit Set for Applying Force	82